

## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: DAWN GARRETT Examiner #: 76107 Date: June 24, 2004  
 Art Unit: 1774 Phone Number: 3172-1523 Serial Number: 10/786,812  
 Mail Box and Bldg/Room Location: Rensselaer 5C 75 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Electroluminescent Device Having Pendant Naphthalanthracene-based Polymers

Inventors (please provide full names): Shiying Zheng, Kathleen Vaeth

Earliest Priority Filing Date: 2/25/2004

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search the polymer described by the structure in claim 1.

Thank you!

*****		*****	
STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher:	<u>T. Cade</u>	NA Sequence (#)	STN <u>\$567.33</u>
Searcher Phone #:		AA Sequence (#)	Dialog
Searcher Location:		Structure (#)	Questel/Orbit
Date Searcher Picked Up:	<u>6/29/04</u>	Bibliographic	Dr.Link
Date Completed:	<u>6/29/04</u>	Litigation	Lexis/Nexis
Searcher Prep & Review Time:	<u>02</u>	Fulltext	Sequence Systems
Clerical Prep Time:		Patent Family	WWW/Internet
Online Time:	<u>1</u>	Other	Other (specify)

=> D HIS

(FILE 'HOME' ENTERED AT 14:12:06 ON 29 JUN 2004)

FILE 'LREGISTRY' ENTERED AT 14:12:16 ON 29 JUN 2004

L1 STR  
L2 SCR 2043

FILE 'REGISTRY' ENTERED AT 14:12:58 ON 29 JUN 2004

L3 1 S L1  
L4 7 S L1 AND L2  
L5 380 S L1 AND L2 FULL  
SAVE L5 GARR812/A  
L6 225 S L5 AND 2-4/NC

⇒ NC = number components (monomers)

FILE 'HCA' ENTERED AT 14:15:29 ON 29 JUN 2004

L7 103 S L6  
L8 35501 S ZHENG ?/AU  
L9 104 S VAETH ?/AU  
L10 1 S L8 AND L9  
L11 1 S L7 AND L10  
L12 102 S L7 NOT L11  
L13 599833 S EL OR E(W)L OR ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR O  
L14 109516 S EL OR E(W)L OR ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR O  
L15 29 S L12 AND L14  
L16 715379 S ANODE? OR CATHODE? OR ELECTRODE?  
L17 6 S L15 AND L16

FILE 'REGISTRY' ENTERED AT 14:18:25 ON 29 JUN 2004

L18 STR  
L19 5 S L18 SSS SAM SUB=L5  
L20 81 S L18 SSS FULL SUB=L5  
SAVE L20 GARR812A/A  
L21 33 S L20 AND 2-4/NC  
L22 0 S L21 AND "C8H8"/MF

FILE 'LREGISTRY' ENTERED AT 14:21:43 ON 29 JUN 2004

FILE 'REGISTRY' ENTERED AT 14:23:17 ON 29 JUN 2004  
E STYRENE/CN  
L23 1 S E3  
L24 67138 S 100-42-5/CRN  
L25 6 S L20 AND L24  
E VINYL/CN  
L26 1 S E3  
L27 0 S 12127-48-9/CRN  
L28 0 S L20 AND L26

FILE 'HCA' ENTERED AT 14:25:03 ON 29 JUN 2004

L29 14 S L25  
L30 1 S L29 AND L14  
L31 12 S L29 AND L13  
L32 31 S L21  
L33 6 S L32 AND L14  
L34 10 S L30 OR L33 OR L17

FILE 'REGISTRY' ENTERED AT 14:27:16 ON 29 JUN 2004

L35 FILE 'LREGISTRY' ENTERED AT 14:27:40 ON 29 JUN 2004  
STR L1

L36 FILE 'REGISTRY' ENTERED AT 14:31:08 ON 29 JUN 2004  
11 S L35 SSS SAM SUB=L5

L37 FILE 'LREGISTRY' ENTERED AT 14:32:12 ON 29 JUN 2004  
STR L35

L38 FILE 'REGISTRY' ENTERED AT 14:36:09 ON 29 JUN 2004  
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L39 STR L37

L40 0 S L39 SSS SAM SUB=L5

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STR L39

L42 FILE 'REGISTRY' ENTERED AT 14:38:37 ON 29 JUN 2004  
0 S L41 SSS SAM SUB=L5

L43 STR L41

L44 0 S L43 SSS SAM SUB=L5

L45 1 S L43 SSS FULL SUB=L5  
SAVE L45 GARR812B/A

L46 FILE 'HCA' ENTERED AT 14:40:19 ON 29 JUN 2004  
1 S L45

L47 1 S L46 AND L14

L48 10 S L34 OR L47

L49 2 S L32 AND L16

L50 10 S L48 OR L49

FILE 'LCA' ENTERED AT 14:43:08 ON 29 JUN 2004

FILE 'HCA' ENTERED AT 14:46:56 ON 29 JUN 2004  
SEL L10 RN

L51 FILE 'REGISTRY' ENTERED AT 14:47:25 ON 29 JUN 2004  
17 S E1-E17

FILE 'HCA' ENTERED AT 14:49:08 ON 29 JUN 2004

FILE 'HCA' ENTERED AT 14:50:32 ON 29 JUN 2004

L52 12645 S L51

L53 573 S L52 AND L13

FILE 'REGISTRY' ENTERED AT 14:50:55 ON 29 JUN 2004

L54 3 S L51 AND PMS/CI

FILE 'HCA' ENTERED AT 14:51:05 ON 29 JUN 2004

L55 1 S L54

L56 11 S L50 OR L55

L57 25 S L32 NOT L56

L58 0 S L57 AND L14

L59 20 S L57 AND FLUOR?

L60 20 S L57 AND L13

L61 0 S L57 AND L16

D. Garrett

10/786, 812

06/29/2004

L62 FILE 'LREGISTRY' ENTERED AT 14:54:13 ON 29 JUN 2004  
STR L43

L63 FILE 'REGISTRY' ENTERED AT 14:57:49 ON 29 JUN 2004  
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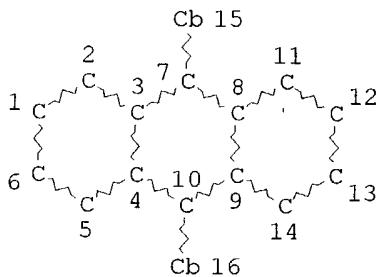
L64 FILE 'LREGISTRY' ENTERED AT 14:58:56 ON 29 JUN 2004  
STR L62

L65 FILE 'REGISTRY' ENTERED AT 15:05:01 ON 29 JUN 2004  
0 S L64 SSS SAM SUB=L5  
L66 1 S L64 SSS FULL SUB=L5

L67 FILE 'HCA' ENTERED AT 15:06:31 ON 29 JUN 2004  
10 S L56 NOT L55  
L68 30 S L7 AND L14  
L69 55 S L57 OR L68  
L70 7 S L68 AND L16  
L71 19 S L68 NOT L56

FILE 'REGISTRY' ENTERED AT 15:11:11 ON 29 JUN 2004

=> D QUE STAT L20  
L1 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE

L2 SCR 2043  
L5 380 SEA FILE=REGISTRY SSS FUL L1 AND L2  
L18 STR

C=C  
1 2

NODE ATTRIBUTES:

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GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
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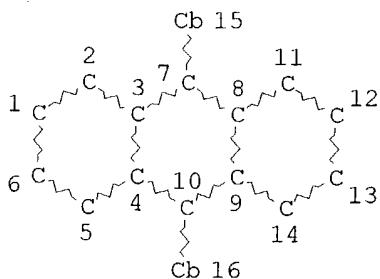
STEREO ATTRIBUTES: NONE

L20 81 SEA FILE=REGISTRY SUB=L5 SSS FUL L18

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81 ANSWERS

=> D QUE STAT L45  
L1 STR



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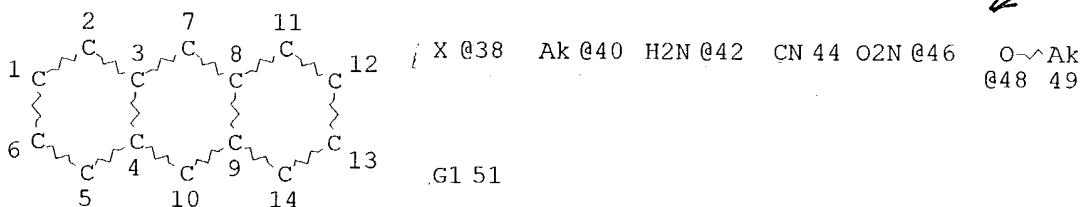
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NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE

L2 SCR 2043  
L5 380 SEA FILE=REGISTRY SSS FUL L1 AND L2  
L43 STR

Cb 26

$R_1 - R_4$



Cb 33

VAR G1=38/40/42/46/48  
NODE ATTRIBUTES:

D. Garrett

10/786,812

06/29/2004

DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE  
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100.0% PROCESSED 12 ITERATIONS 1 ANSWERS  
SEARCH TIME: 00.00.01

=> FILE HCA

FILE 'HCA' ENTERED AT 15:12:21 ON 29 JUN 2004  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
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FILE COVERS 1907 - 24 Jun 2004 VOL 141 ISS 1  
FILE LAST UPDATED: 24 Jun 2004 (20040624/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

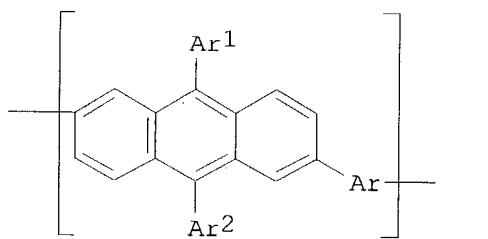
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THIS IS THE APPLICANT'S RECORD

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L72 ANSWER 1 OF 1 HCA COPYRIGHT 2004 ACS on STN  
138:212607 **Electroluminescent** devices having diarylanthracene polymers. **Zheng, Shiying; Shi, Jianmin; Vaeth, Kathleen** M. (Eastman Kodak Company, USA). Eur. Pat. Appl. EP 1288276 A1 20030305, 47 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK. (English). CODEN: EPXXDW. APPLICATION: EP 2002-78395 20020816. PRIORITY: US 2001-941120 20010828.

GI



AB **Electroluminescent** devices comprising an anode, a cathode, and an emissive layer having a polymer luminescent material disposed between the anode and cathode are described in which the polymer luminescent material includes diarylanthracene-based conjugated polymer having a repeating unit are described by the general formula I (Ar1, Ar2, and Ar = independently selected C6-40 (un)substituted aryl or C4-40 (un)substituted heteroaryl).

IC ICM C09K011-06  
ICS H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 38, 76

ST diarylanthracene polymer **electroluminescent** device

IT **Electroluminescent** devices  
(**electroluminescent** devices using diarylanthracene polymers)

IT Luminescent substances  
(**electroluminescent**; **electroluminescent** devices using diarylanthracene polymers)

IT 500553-03-7P 500553-05-9P 500553-06-0P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(**electroluminescent** devices using diarylanthracene polymers)

IT 106-41-2, 4-Bromophenol 128-08-5, NBS 358-23-6, Triflate anhydride 18162-48-6 18908-66-2, 2-Ethylhexyl bromide 201733-56-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(**electroluminescent** devices using diarylanthracene polymers)

IT 164352-24-3P 332083-42-8P 332083-43-9P 332083-44-0P 474310-99-1P  
500553-00-4P 500553-01-5P 500553-02-6P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(**electroluminescent** devices using diarylanthracene polymers)

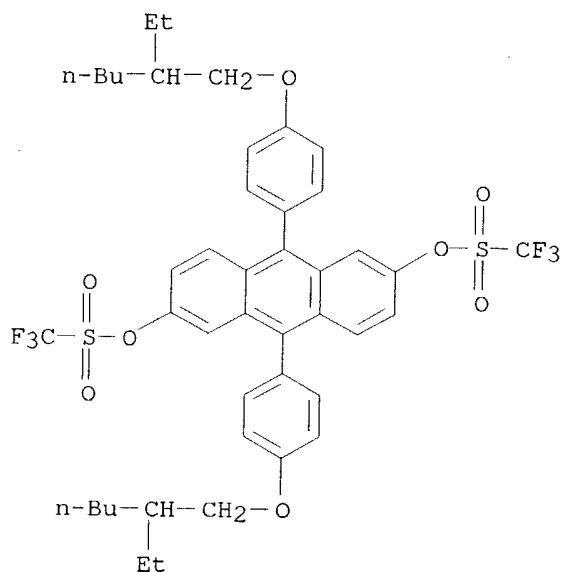
IT 500553-03-7P 500553-05-9P 500553-06-0P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(**electroluminescent** devices using diarylanthracene polymers)

RN 500553-03-7 HCA

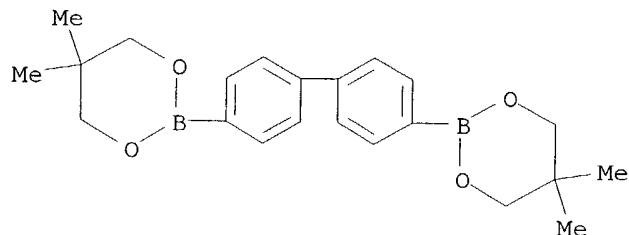
CN Methanesulfonic acid, trifluoro-, 9,10-bis[4-[(2-ethylhexyl)oxy]phenyl]-2,6-anthracenediyl ester, polymer with 2,2'-[1,1'-biphenyl]-4,4'-diylbis[5,5-dimethyl-1,3,2-dioxaborinane] (9CI) (CA INDEX NAME)

CM 1

CRN 500553-01-5  
CMF C44 H48 F6 O8 S2



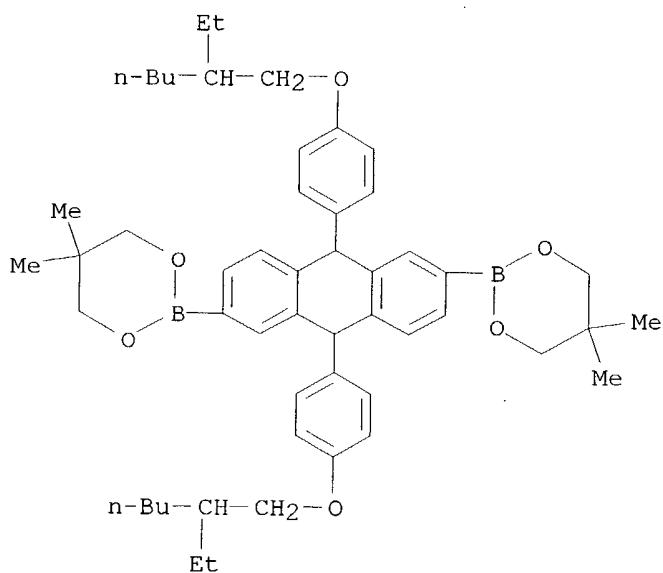
CM 2

CRN 5487-93-4  
CMF C22 H28 B2 O4

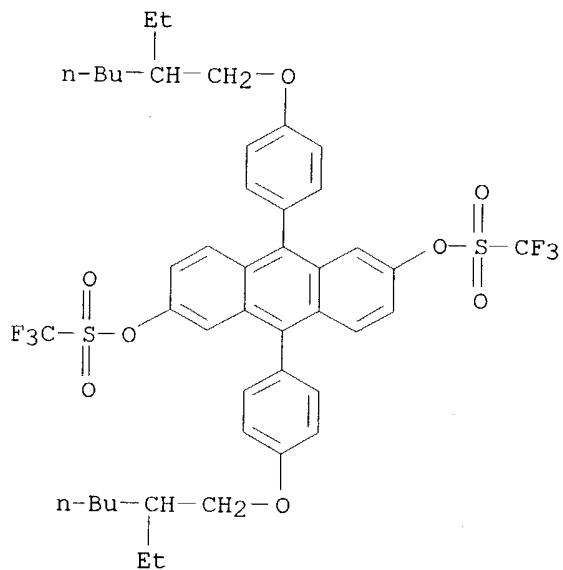
RN 500553-05-9 HCA  
 CN Methanesulfonic acid, trifluoro-, 9,10-bis[4-[(2-ethylhexyl)oxy]phenyl]-2,6-anthracenediyl ester, polymer with 2,2'-[9,10-bis[4-[(2-ethylhexyl)oxy]phenyl]-9,10-dihydro-2,6-anthracenediyl]bis[5,5-dimethyl-1,3,2-dioxaborinane] (9CI) (CA INDEX NAME)

CM 1

CRN 500553-04-8  
CMF C52 H70 B2 O6



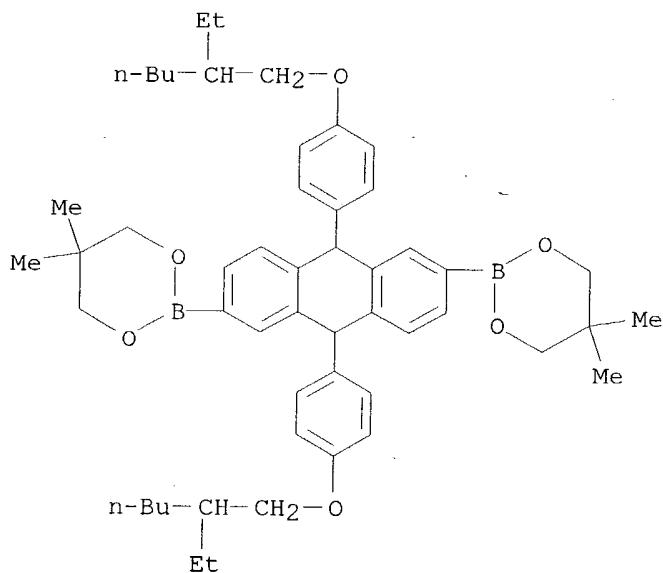
CM 2

CRN 500553-01-5  
CMF C44 H48 F6 O8 S2

RN 500553-06-0 HCA  
 CN 9,10-Anthracenedione, 2,6-bis{[(1,1-dimethylethyl)dimethylsilyl]oxy}-,  
 polymer with 2,2'-[9,10-bis[4-[(2-ethylhexyl)oxy]phenyl]-9,10-dihydro-2,6-  
 anthracenediyl]bis[5,5-dimethyl-1,3,2-dioxaborinane] (9CI) (CA INDEX  
 NAME)

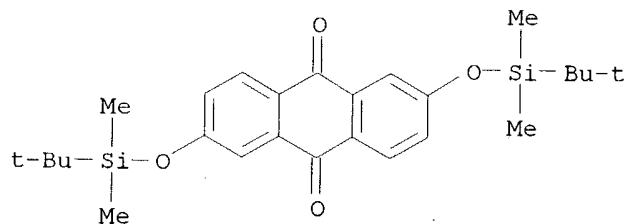
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CRN 500553-04-8  
 CMF C52 H70 B2 O6



CM 2

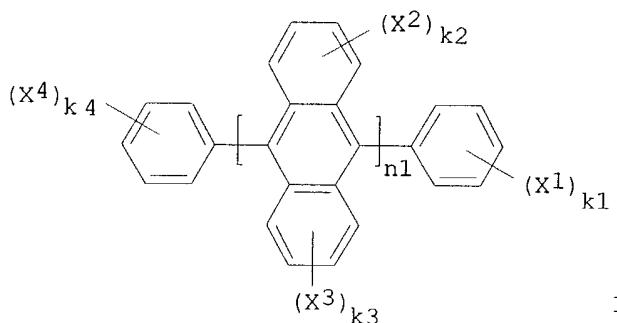
CRN 474310-99-1  
 CMF C26 H36 O4 Si2



=> D L67 1-10 CBIB ABS HITIND HITSTR

L67 ANSWER 1 OF 10 HCA COPYRIGHT 2004 ACS on STN  
 139:401372 Organic **electroluminescent** device with anthracenyl  
 derivative in vinyl polymer. Ebisawa, Akira; Shinkai, Masahiro (TDK  
 Corporation, Japan). Jpn. Kokai Tokkyo Koho JP 2003338375 A2 20031128, 18  
 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-69137 20030314.  
 PRIORITY: JP 2002-70125 20020314.

GI



AB The invention refers to an organic **electroluminescent** device comprising a 9,10-substituted anthracenyl structure I [ $X1-4 =$  substituents;  $k1, k4 = 0 - 5$ ;  $k2, k3 = 0 - 4$ ] in a vinyl polymer.

IC ICM H05B033-14  
ICS C07C001-32; C07C015-60; C08F012-32; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **electroluminescent** device vinyl polymer anthracene

IT **Electroluminescent** devices  
(blue-emitting; organic **electroluminescent** device with anthracenyl derivative in vinyl polymer)

IT Vinyl compounds, uses  
RL: DEV (Device component use); USES (Uses)  
(polymers; organic **electroluminescent** device with anthracenyl derivative in vinyl polymer)

IT 625854-01-5P 625854-05-9P 625854-07-1P 625854-09-3P  
**625854-10-6P** 625854-14-0P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(organic **electroluminescent** device with anthracenyl derivative in vinyl polymer)

IT 2156-04-9, 4-Vinylphenyl boronic acid 15016-43-0 400607-16-1  
522616-11-1 625854-03-7 625854-12-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(organic **electroluminescent** device with anthracenyl derivative in vinyl polymer)

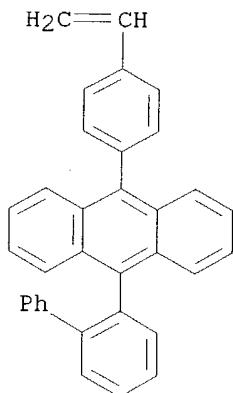
IT **625854-10-6P**  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(organic **electroluminescent** device with anthracenyl derivative in vinyl polymer)

RN 625854-10-6 HCA

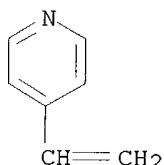
CN Pyridine, 4-ethenyl-, polymer with 9-[1,1'-biphenyl]-2-yl-10-(4-ethenylphenyl)anthracene (9CI) (CA INDEX NAME)

CM 1

CRN 625854-00-4  
CMF C34 H24



CM 2

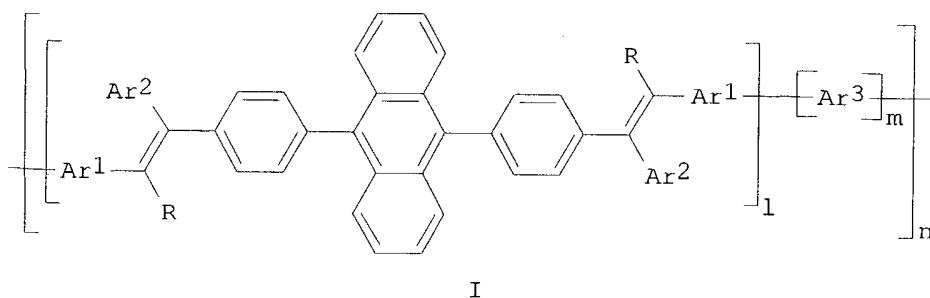
CRN 100-43-6  
CMF C7 H7 N

L67 ANSWER 2 OF 10 HCA COPYRIGHT 2004 ACS on STN

138:392829 Blue **light-emitting** polymer containing

9,10-diphenylanthracene moiety and **electroluminescent** device using the same. You, Hong; Joo, Dong-Jin; Kwak, Gil-Su; Kim, Jong-Wook; Kwon, Soon-Ki; Kim, Yun-Hi; Shin, Dong-Cheol; Kim, Hyung-Sun; Jeong, Hyun-Cheol (SK Corporation, S. Korea). PCT Int. Appl. WO 2003040255 A1 20030515, 85 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-KR2080 20021108. PRIORITY: KR 2001-69770 20011109; KR 2002-508 20020104.

GI



AB An organic **electroluminescent** polymer is described having a main chain consisting of 9,10-diphenylanthracene and vinylene units represented by the general formula I wherein, Ar1, Ar3 = an arylene group with none, alkyl (R1-), or alkoxy (RO-) substitute; an 10-24 atom arylene group having fused aromatic ring; an arylene group with an R1 amino substitution or an aryl(Ph-) amino group; a carbazole derivative having an R1- or an Ph-group; a fluorenylene group having, at position 9, an R1- group, a polyalkoxide (C1-C25) group, or an R1- or RO- substituted aryl group; a silylene group substituted with R1-, RO- or Ph- group; and an arylene (or aryl for Ar2 and R) group having a silyl group having an R1-, RO-, Ph-group; and (Ar2, R) maybe the same chains as in Ar1 or Ar3 or H-, cyano or fluoro group; wherein the size of R1- or RO- chain is C1-C25 and Ph- is C6-C30 unless specified otherwise, 1 = 1-100,000, m = 0-50,000, (1  $\geq$  m); and n = 1-100,000. An organic **electroluminescent** device using the **electroluminescent** polymer is also described.

IC ICM C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 37, 38, 76

ST **light-emitting** polymer phenylanthracene  
**electroluminescent** device

IT **Electroluminescent** devices  
(blue **light-emitting** polymer containing phenylanthracene moiety and **electroluminescent** device using the same)

IT Polymers, uses  
RL: DEV (Device component use); USES (Uses)  
(**electroluminescent**; blue **light-emitting** polymer containing phenylanthracene moiety and **electroluminescent** device using the same)

IT 50926-11-9, Indium tin oxide  
RL: DEV (Device component use); USES (Uses)  
(blue **light-emitting** polymer containing phenylanthracene moiety and **electroluminescent** device using the same)

IT 526202-85-7P 526202-88-0P 526202-89-1P  
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
(blue **light-emitting** polymer containing phenylanthracene moiety and **electroluminescent** device using the same)

IT 123863-97-8P, 9,9-Dihexylfluorene 251659-87-7P 284490-90-0P  
503834-10-4P 526202-84-6P 526202-86-8P 526202-87-9P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT

(Reactant or reagent)

(blue **light-emitting** polymer containing phenylanthracene moiety and **electroluminescent** device using the same)

IT 86-73-7, Fluorene 90-90-4, 4-Bromobenzophenone 111-25-1, 1-Bromohexane 121-43-7, Trimethylborate 523-27-3, 9,10-Dibromoanthracene 586-75-4, 4-Bromobenzoylchloride 1449-46-3 38186-51-5 203927-98-4 224558-94-5

RL: RCT (Reactant); RACT (Reactant or reagent)

(blue **light-emitting** polymer containing phenylanthracene moiety and **electroluminescent** device using the same)

IT 49718-51-6, Poly(4-styrenesulfonate) 126213-51-2, PEDOT

RL: DEV (Device component use); USES (Uses)

(hole transport layer; blue **light-emitting** polymer containing phenylanthracene moiety and **electroluminescent** device using the same)

IT 526202-85-7P 526202-88-0P 526202-89-1P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(blue **light-emitting** polymer containing phenylanthracene moiety and **electroluminescent** device using the same)

RN 526202-85-7 HCA

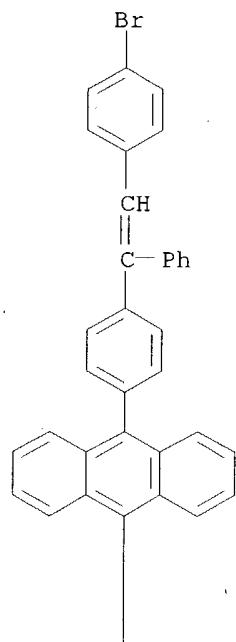
CN Boronic acid, [2-[2-(ethylhexyl)oxy]-5-methoxy-1,4-phenylene]bis-, polymer with 9,10-bis[4-[2-(4-bromophenyl)-1-phenylethenyl]phenyl]anthracene (9CI) (CA INDEX NAME)

CM 1

CRN 526202-84-6

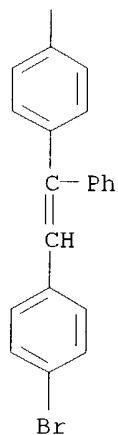
CMF C54 H36 Br2

PAGE 1-A



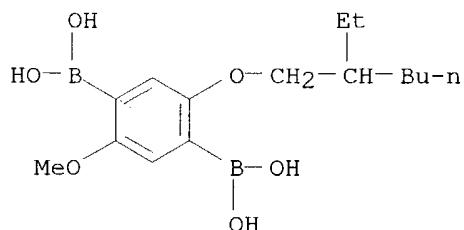
4

PAGE 2-A



CM 2

CRN 224558-94-5  
CMF C15 H26 B2 O6



RN 526202-88-0 HCA

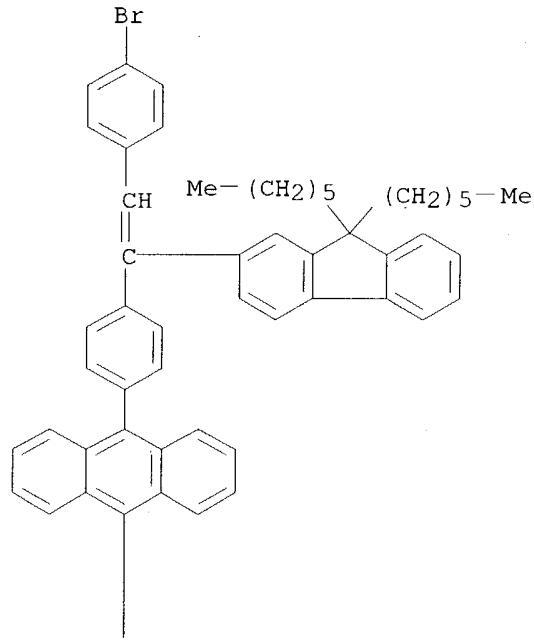
CN Boronic acid, [2-[(2-ethylhexyl)oxy]-5-methoxy-1,4-phenylene]bis-, polymer with 9,10-bis[4-[2-(4-bromophenyl)-1-(9,9-dihexyl-9H-fluoren-2-yl)ethenyl]phenyl]anthracene (9CI) (CA INDEX NAME)

CM 1

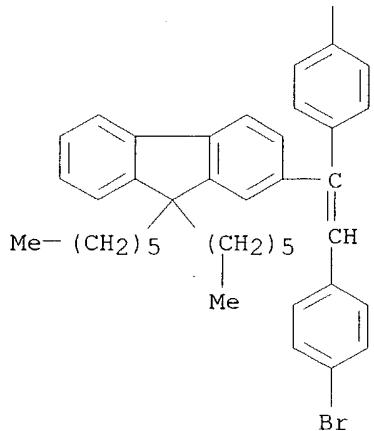
CRN 526202-87-9

CMF C92 H92 Br2

PAGE 1-A

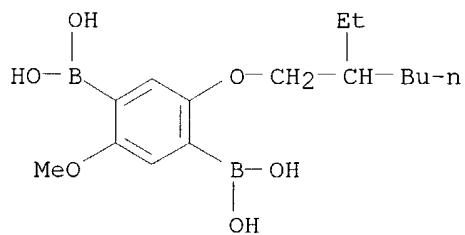


PAGE 2-A



CM 2

CRN 224558-94-5  
 CMF C15 H26 B2 O6

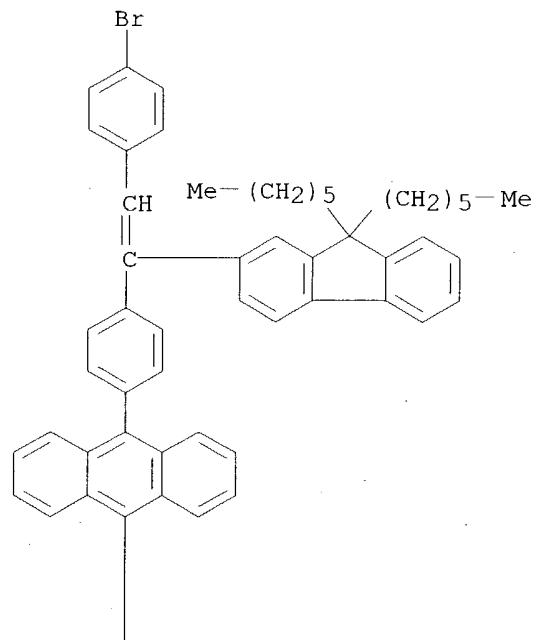


RN 526202-89-1 HCA  
 CN Boronic acid, (9,9-dihexyl-9H-fluorene-2,7-diyl)bis-, polymer with  
 9,10-bis[4-[2-(4-bromophenyl)-1-(9,9-dihexyl-9H-fluoren-2-  
 yl)ethenyl]phenyl]anthracene (9CI) (CA INDEX NAME)

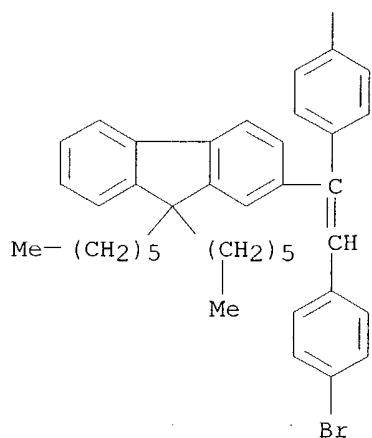
CM 1

CRN 526202-87-9  
 CMF C92 H92 Br2

PAGE 1-A

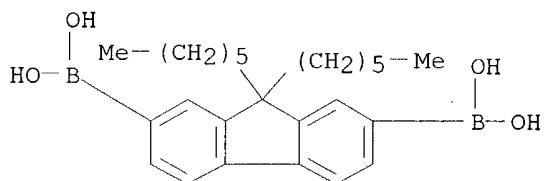


PAGE 2-A



CM 2

CRN 203927-98-4  
CMF C25 H36 B2 O4

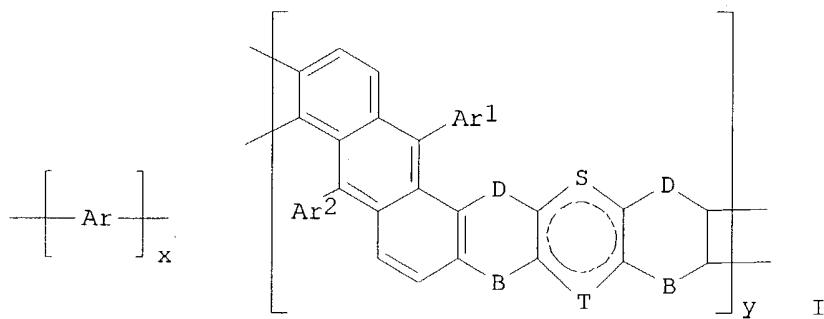


L67 ANSWER 3 OF 10 HCA COPYRIGHT 2004 ACS on STN

138:212611 **Electroluminescent** devices having diarylanthracene ladder polymers in emissive layers. Zheng, Shiying; Shi, Jianmin (Eastman Kodak Company, USA). Eur. Pat. Appl. EP 1289029 A2 20030305, 43 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK. (English). CODEN: EPXXDW. APPLICATION: EP 2002-78394 20020816. PRIORITY: US 2001-941009 20010828.

GT

G1



AB **Organic light-emitting diodes comprising an anode, a cathode and an emissive layer disposed between the anode and cathode** are described in which the emissive layer includes a polymer having repeating units described by the general formula I ( $0 \leq x < 1$ ;  $0 < y \leq 1$ ;  $x + y = 1$ ; S and T = independently selected chemical bonds, oxygen atoms, sulfur atoms, C-R, or N-R; R = H, C1-24 alkyl, C6-28 (un)substituted aryl, C4-40 (un)substituted heteroaryl, CN, nitro, Cl, Br, or F; in each ring including D and E, if either D or E is a single bond, then the other group is not a single bond and is R-C-R where R is a substituent; Ar1, Ar2, and Ar = independently selected C6-40 (un)substituted aryl; or Ar1, Ar2, and Ar = independently selected C4-40 (un)substituted heteroaryl). The emissive layer may be doped.

IC ICM H01L051-20

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38, 76

## ST arylanthracene ladder polymer electroluminescent device

## IT Ladder polymers

RL: DEV (Device component use); SPN (Synthetic preparation); PREP

(Preparation); USES (Uses)  
(electroluminescent devices having diarylanthracene ladder polymers in emissive layers)

IT Luminescent substances  
(electroluminescent; electroluminescent devices having diarylanthracene ladder polymers in emissive layers)

IT **Electroluminescent devices**  
(organic; electroluminescent devices having diarylanthracene ladder polymers in emissive layers)

IT **474311-03-0DP**, benzylic alc. derivative, cyclized 474311-04-1DP,  
benzylic alc. derivative, cyclized  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(electroluminescent devices having diarylanthracene ladder polymers in emissive layers)

IT 84-60-6, 2,6-Dihydroxyanthraquinone 104-72-3 358-23-6, Triflate anhydride 1074-24-4, 2,5-Dibromo-p-xylene 1078-71-3 7719-09-7, Thionyl chloride 7726-95-6, Bromine, reactions 18162-48-6 201733-56-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(electroluminescent devices having diarylanthracene ladder polymers in emissive layers)

IT 13731-82-3P, 2,5-Dibromoterephthalic acid 13815-90-2P,  
2,5-Dibromoterephthaloyl chloride 76287-49-5P, 1-Bromo-4-heptylbenzene 136296-63-4P 474310-99-1P 474311-00-7P 474311-02-9P  
**474311-03-0P** 474311-04-1P 500564-98-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(electroluminescent devices having diarylanthracene ladder polymers in emissive layers)

IT **474311-03-0DP**, benzylic alc. derivative, cyclized  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(electroluminescent devices having diarylanthracene ladder polymers in emissive layers)

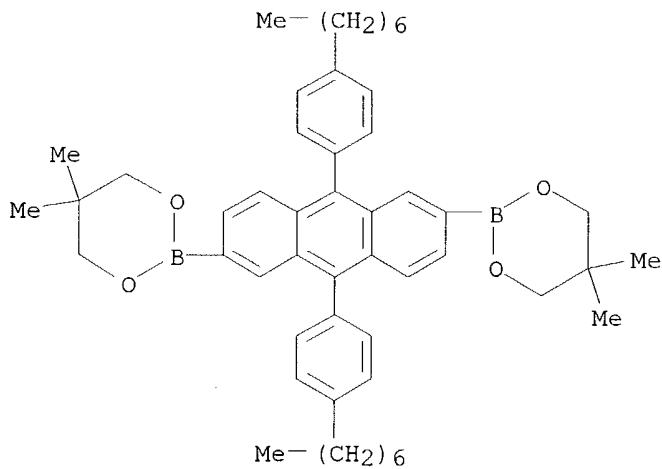
RN 474311-03-0 HCA

CN Methanone, (2,5-dibromo-1,4-phenylene)bis[(4-decylphenyl)-, polymer with 2,2'-[9,10-bis(4-heptylphenyl)-2,6-anthracenediyl]bis[5,5-dimethyl-1,3,2-dioxaborinane] (9CI) (CA INDEX NAME)

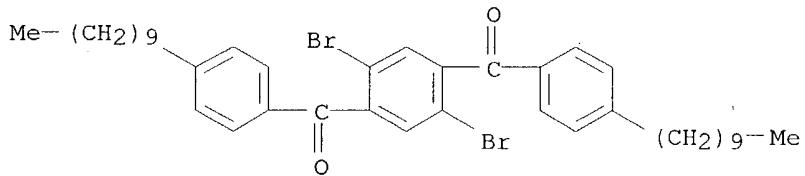
CM 1

CRN 474311-02-9

CMF C50 H64 B2 O4



CM 2

CRN 136296-63-4  
CMF C40 H52 Br2 O2

IT 474311-03-0P

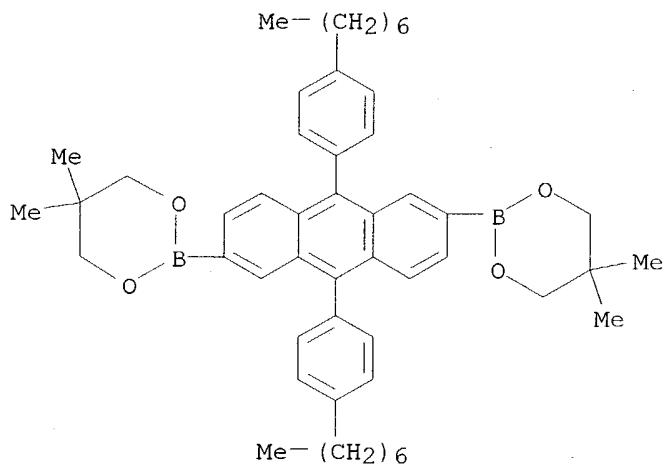
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(electroluminescent devices having diarylanthracene ladder polymers in emissive layers)

RN 474311-03-0 HCA

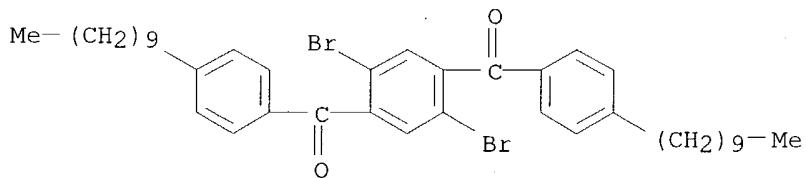
CN Methanone, (2,5-dibromo-1,4-phenylene)bis[(4-decylphenyl)-, polymer with 2,2'-[9,10-bis(4-heptylphenyl)-2,6-anthracenediyl]bis[5,5-dimethyl-1,3,2-dioxaborinane] (9CI) (CA INDEX NAME)

CM 1

CRN 474311-02-9  
CMF C50 H64 B2 O4



CM 2

CRN 136296-63-4  
CMF C40 H52 Br2 O2

L67 ANSWER 4 OF 10 HCA COPYRIGHT 2004 ACS on STN  
 135:310673 Organic **electroluminescent** devices. Sugiura, Hisanori;  
 Hisada, Hitoshi; Sato, Tetsuya; Matsuo, Mikiko (Matsushita Electric  
 Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001284052 A2  
 20011012, 16 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-101930  
 20000404.

AB The devices comprise: a pair of **anode** and a **cathode**  
 interposing an organic laminate including a **light-emitting**  
 layer containing a copolymer of a 1st monomer having an electron transporting  
 mol. and a 2nd monomer having a phosphor mol.

IC ICM H05B033-14  
 ICS C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
 Properties)

ST org **electroluminescent** copolymer phosphor electron transport

IT Electric transport properties  
**Electrodes**  
 Phosphors  
 Pigments, nonbiological  
 Semiconductor lasers  
 (organic **electroluminescent** devices)

IT **Electroluminescent** devices  
 (organic; organic **electroluminescent** devices)

IT 7429-90-5, Aluminum, uses 7439-93-2, Lithium, uses 15082-28-7

16998-91-7 50926-11-9, ITO 65181-78-4 366464-03-1 366464-06-4  
 366464-08-6 366464-11-1 366464-13-3 366464-14-4 366464-15-5  
 366464-17-7 366464-19-9 366464-20-2 366464-21-3 366478-95-7  
**366478-98-0** 366479-00-7 366479-01-8 366479-02-9

RL: DEV (Device component use); USES (Uses)  
 (organic **electroluminescent** devices)

IT **366478-98-0**

RL: DEV (Device component use); USES (Uses)  
 (organic **electroluminescent** devices)

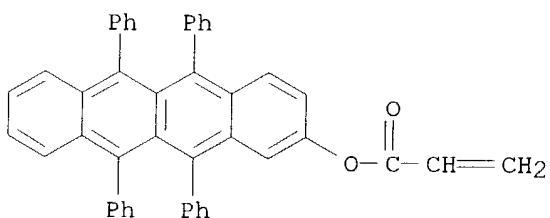
RN 366478-98-0 HCA

CN Aluminum, [(8-(hydroxy- $\kappa$ O)-5-quinolinyl- $\kappa$ N]  
 2-propenoato]bis(8-quinolinolato- $\kappa$ N1,  $\kappa$ O8)-, polymer with  
 5,6,11,12-tetraphenyl-2-naphthacenyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 366478-97-9

CMF C45 H30 O2

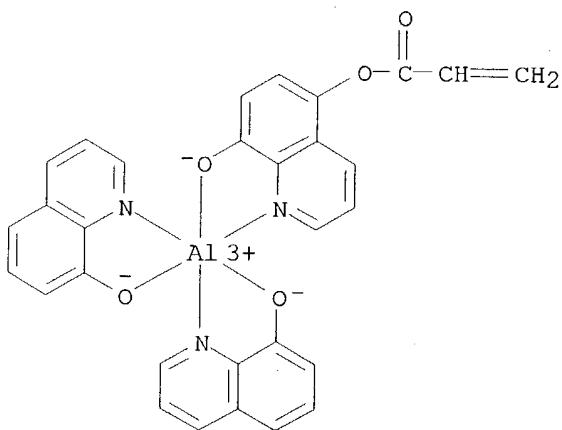


CM 2

CRN 366478-94-6

CMF C30 H20 Al N3 O5

CCI CCS



L67 ANSWER 5 OF 10 HCA COPYRIGHT 2004 ACS on STN  
 135:5898 Controlled radical polymerization of **electroluminescent**  
 vinyl derivatives. Marsitzky, Dirk; Blainey, Paul; Carter, Kenneth R.  
 (IBM Almaden Research Center, NSF Center for Polymeric Interfaces and

Macromolecular Assemblies, San Jose, CA, USA). Polymer Preprints (American Chemical Society, Division of Polymer Chemistry), 42(1), 468-469 (English) 2001. CODEN: ACPPAY. ISSN: 0032-3934. Publisher: American Chemical Society, Division of Polymer Chemistry.

AB 9-(4-Ethenylphenyl)-10-phenylanthracene (vDPA) was synthesized and subjected to free radical (AIBN-initiated), controlled radical (alkoxyamine-initiated), and atom-transfer radical polymers. Homopolymer and styrene copolymer were characterized (polydispersity) and examined on their photoluminescent properties. 2-Vinylnaphthalene and 9-vinylcarbazole were polymerized in presence of an alkoxyamine.

CC 35-4 (Chemistry of Synthetic High Polymers)

IT Polymerization  
(atom transfer, radical; controlled radical polymerization of **electroluminescent** vinyl derivs.)

IT Polymerization catalysts  
(nitroxide derivative; for controlled radical polymerization of **electroluminescent** vinyl derivs.)

IT Polymerization  
(nitroxide-mediated; controlled radical polymerization of **electroluminescent** vinyl derivs.)

IT Fluorescence  
Luminescence  
(of **electroluminescent** vinyl aromatic polymers from controlled radical polymerization)

IT 227000-59-1P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(catalyst; for controlled radical polymerization of **electroluminescent** vinyl derivs.)

IT 25067-59-8P, Poly(9-vinylcarbazole) **26742-85-8P**,  
9-(4-Ethenylphenyl)-10-phenylanthracene-styrene copolymer 26742-86-9P,  
9-(4-Ethenylphenyl)-10-phenylanthracene homopolymer 28406-56-6P,  
Poly(2-vinylnaphthalene)  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(controlled radical polymerization of **electroluminescent** vinyl derivs.)

IT 6671-65-4P, 9-(4-Ethenylphenyl)-10-phenylanthracene  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(monomer; controlled radical polymerization of **electroluminescent** vinyl derivs.)

IT **26742-85-8P**, 9-(4-Ethenylphenyl)-10-phenylanthracene-styrene copolymer  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(controlled radical polymerization of **electroluminescent** vinyl derivs.)

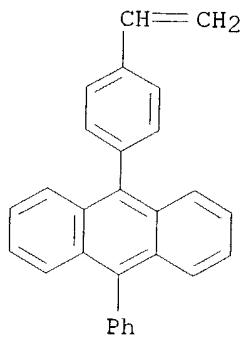
RN 26742-85-8 HCA

CN Anthracene, 9-(4-ethenylphenyl)-10-phenyl-, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 6671-65-4

CMF C28 H20

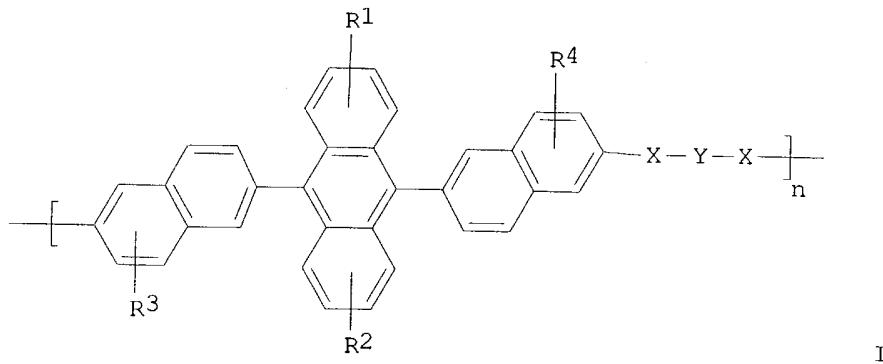


CM 2

CRN 100-42-5  
CMF C8 H8 $\text{H}_2\text{C}=\text{CH}-\text{Ph}$ 

L67 ANSWER 6 OF 10 HCA COPYRIGHT 2004 ACS on STN  
 134:346283 **Electroluminescent** devices having naphthalanthracene-based polymers. Shi, Jianmin; Zheng, Shiying (Eastman Kodak Company, USA). Eur. Pat. Appl. EP 1094101 A2 20010425, 56 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2000-203504 20001009. PRIORITY: US 1999-421980 19991020.

GI



I

AB **Electroluminescent** devices comprising an **anode**, a **cathode**, and polymer luminescent materials disposed between the **anode** and **cathode** are described in which the polymeric luminescent materials include 9,10-di-(2-naphthyl)anthracene-based polymers described by the general formula I (R1-4 = independently selected

H, alkyl, Cl-24 alkoxy, C6-28 (un)substituted aryl, C4-40 (un)substituted heteroaryl, F, Cl, Br, cyano, or nitro groups; X = a linking group; and Y includes ≥1 comonomer units that are (un)substituted alkyl, alkenyl, aryl, heteroaryl, or conjugated groups).

IC ICM C09K011-06  
IC S H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST Section cross-reference(s): 38, 76  
naphthyl anthracene polymer **electroluminescent** device

IT **Electroluminescent** devices

(**electroluminescent** devices using naphthylanthracene-based polymers)

IT Phosphors

(**electroluminescent**; **electroluminescent** devices using naphthylanthracene-based polymers)

337368-77-1 337368-80-6 **337368-87-3** 337368-91-9  
337368-95-3 337369-10-5 337369-13-8 337369-16-1 337369-19-4  
337369-23-0 337369-27-4 **337369-36-5** **337369-46-7**  
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337369-67-2 337369-69-4 337369-71-8 337369-73-0 337369-75-2  
337369-77-4 337369-78-5 337369-79-6 337369-80-9 337369-82-1  
337369-86-5 337369-88-7 337369-90-1 337369-92-3 337369-94-5  
337369-95-6 337369-97-8 337369-99-0 337370-01-1 337370-03-3  
337370-05-5 337370-07-7 337370-08-8 337370-10-2 337370-12-4  
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337370-31-7 337370-33-9 337370-35-1 337370-37-3 337370-39-5  
337370-41-9 337370-43-1 337370-45-3 337370-47-5 337370-49-7  
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**337370-69-1** **337370-72-6** **337370-75-9**  
**337370-78-2** **337370-84-0** **337370-87-3**  
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337372-79-9 337372-81-3 337372-83-5  
337372-86-8 337372-88-0 337372-91-5  
337372-94-8 337372-96-0 337372-99-3

**337373-02-1 337373-05-4 337373-07-6**  
**337373-10-1 337373-13-4 337373-16-7**  
**337373-19-0 337373-21-4 337373-23-6**  
**337373-26-9 337373-29-2 337373-31-6**  
**337373-34-9 337373-37-2 337373-40-7**  
**337373-41-8** 337457-28-0 337457-29-1 337457-30-4  
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337460-32-9 337460-50-1 337460-51-2 337460-56-7 337460-57-8  
337460-58-9 337460-62-5 337460-63-6 337460-69-2 337460-71-6  
337460-72-7 337460-75-0 337460-76-1 337460-77-2 337460-78-3  
337460-79-4 337460-97-6 337461-03-7

RL: DEV (Device component use); USES (Uses)

(electroluminescent devices using naphthylanthracene-based polymers)

IT 337461-04-8 337461-06-0 337461-07-1 337461-08-2 337461-09-3  
337461-10-6 337461-11-7 337461-13-9 337461-14-0 337461-15-1  
337461-16-2 337461-18-4 337461-19-5 337461-20-8 337461-21-9  
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337464-30-9 337464-31-0 337464-32-1 337464-44-5 337464-45-6  
337464-46-7 337464-47-8 337464-48-9 337464-60-5 337464-61-6  
337465-00-6 337465-01-7 337465-03-9 337465-04-0 337465-12-0  
337465-14-2 337465-16-4 337465-17-5 337465-19-7 337465-22-2  
337465-23-3 337465-44-8 337465-45-9 337465-98-2

RL: DEV (Device component use); USES (Uses)

(electroluminescent devices using naphthylanthracene-based polymers)

IT 337368-83-9P 337368-99-7P 337369-03-6P 337369-07-0P 337369-31-0P  
**337369-41-2P** 337369-52-5P 337369-84-3P **337370-80-6P**  
**337371-21-8P 337371-74-1P**

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(electroluminescent devices using naphthylanthracene-based polymers)

IT 18798-85-1P 18800-99-2P 62375-58-0P 99964-58-6P 106679-32-7P  
235099-48-6P 332083-42-8P 332083-43-9P 332083-44-0P 332083-45-1P  
332083-46-2P 337369-40-1P 337370-61-3P 337370-62-4P 337370-63-5P  
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(electroluminescent devices using naphthylanthracene-based polymers)

IT 84-60-6, 2,6-Dihydroxyanthraquinone 98-06-6, tert-Butyl benzene  
106-89-8, Epichlorohydrin, reactions 121-43-7, Trimethyl borate  
126-30-7, 2,2-Dimethylpropane-1,3-diol 143-15-7, 1-Bromododecane  
523-27-3, 9,10-Dibromoanthracene 628-13-7, Pyridine hydrochloride  
5111-65-9, 2-Bromo-6-methoxy naphthalene 7439-95-4, Magnesium, reactions  
15231-91-1, 6-Bromo-2-hydroxynaphthalene 18908-66-2, 2-Ethylhexyl  
bromide 25620-62-6, Dibromoethane 32703-79-0  
RL: RCT (Reactant); RACT (Reactant or reagent)

(**electroluminescent** devices using naphthalanthracene-based polymers)

IT 38046-82-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(**electroluminescent** devices using naphthalanthracene-based polymers)

IT 337368-87-3 337369-36-5 337369-46-7  
 337370-69-1 337370-72-6 337370-75-9  
 337370-78-2 337370-84-0 337370-87-3  
 337370-90-8 337370-93-1 337370-97-5  
 337371-00-3 337371-01-4 337371-04-7  
 337371-08-1 337371-10-5 337371-11-6  
 337371-13-8 337371-14-9 337371-16-1  
 337371-18-3 337371-20-7 337371-24-1  
 337371-26-3 337371-29-6 337371-32-1  
 337371-35-4 337371-38-7 337371-40-1  
 337371-42-3 337371-45-6 337371-47-8  
 337371-49-0 337371-52-5 337371-55-8  
 337371-59-2 337371-63-8 337371-66-1  
 337371-69-4 337371-71-8 337371-76-3  
 337371-78-5 337371-80-9 337371-82-1  
 337371-86-5 337371-87-6 337371-88-7  
 337371-92-3 337371-96-7 337371-97-8  
 337371-99-0 337372-02-8 337372-05-1  
 337372-09-5 337372-12-0 337372-15-3  
 337372-19-7 337372-22-2 337372-25-5  
 337372-28-8 337372-32-4 337372-35-7  
 337372-37-9 337372-40-4 337372-43-7  
 337372-47-1 337372-50-6 337372-52-8  
 337372-55-1 337372-57-3 337372-60-8  
 337372-63-1 337372-65-3 337372-67-5  
 337372-70-0 337372-73-3 337372-76-6  
 337372-79-9 337372-81-3 337372-83-5  
 337372-86-8 337372-88-0 337372-91-5  
 337372-94-8 337372-96-0 337372-99-3  
 337373-02-1 337373-05-4 337373-07-6  
 337373-10-1 337373-13-4 337373-16-7  
 337373-19-0 337373-21-4 337373-23-6  
 337373-26-9 337373-29-2 337373-31-6  
 337373-34-9 337373-37-2 337373-40-7  
 337373-41-8

RL: DEV (Device component use); USES (Uses)

(**electroluminescent** devices using naphthalanthracene-based polymers)

RN 337368-87-3 HCA

CN Poly[oxy(1-oxo-1,5-pentanediyl)][4-[2-[4-(dicyanomethylene)-6-(1,1-dimethylethyl)-4H-pyran-3-yl]ethenyl]phenyl]imino](5-oxo-1,5-pentanediyl)oxy-2,6-naphthalenediyl[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]-2,6-naphthalenediyl] (9CI) (CA INDEX NAME)

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

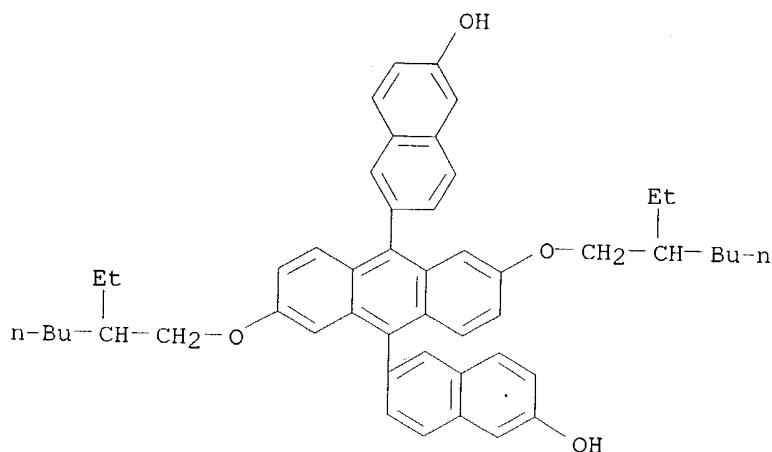
RN 337369-36-5 HCA

CN 1H-Indene-5-carboxylic acid, 3-(4-carboxyphenyl)-2,3-dihydro-1,1,3-trimethyl-, polymer with 6,6'-(2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl)bis[2-naphthalenol] (9CI) (CA INDEX NAME)

CM 1

CRN 337369-35-4

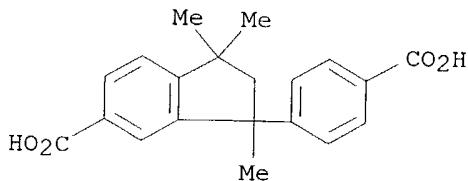
CMF C50 H54 O4



CM 2

CRN 3569-18-4

CMF C20 H20 O4



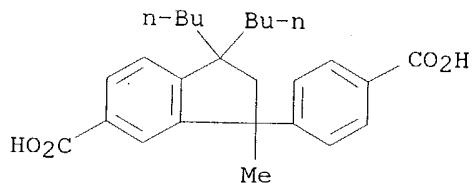
RN 337369-46-7 HCA

CN 1H-Indene-5-carboxylic acid, 1,1-dibutyl-3-(4-carboxyphenyl)-2,3-dihydro-3-methyl-, polymer with 3-[(2-ethylhexyl)oxy]-6-[10-[8-[(2-ethylhexyl)oxy]-6-

hydroxy-2-naphthalenyl]-9-anthracenyl]-2-naphthalenol (9CI) (CA INDEX NAME)

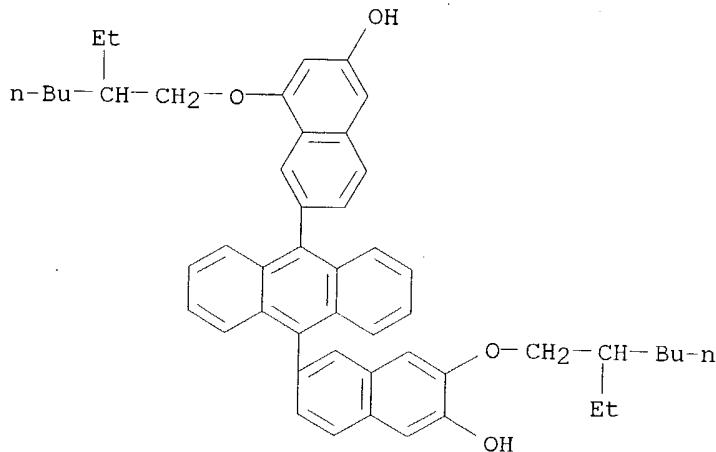
CM 1

CRN 337369-45-6  
CMF C26 H32 O4



CM 2

CRN 337369-44-5  
CMF C50 H54 O4

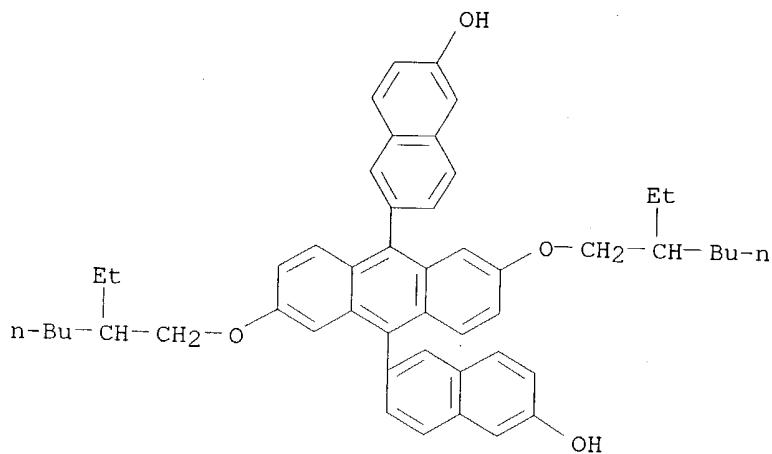


RN 337370-69-1 HCA

CN Octanedioic acid, polymer with 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis[2-naphthalenol] (9CI) (CA INDEX NAME)

CM 1

CRN 337369-35-4  
CMF C50 H54 O4



CM 2

CRN 505-48-6

CMF C8 H14 O4

 $\text{HO}_2\text{C} - (\text{CH}_2)_6 - \text{CO}_2\text{H}$ 

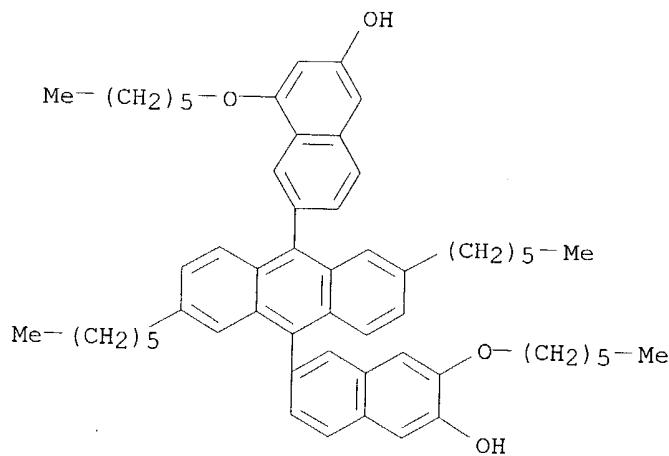
RN 337370-72-6 HCA

CN Hexanedioic acid, polymer with 6-[2,6-dihexyl-10-[8-(hexyloxy)-6-hydroxy-2-naphthalenyl]-9-anthracyl]-3-(hexyloxy)-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

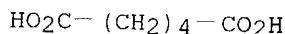
CRN 337370-71-5

CMF C58 H70 O4



CM 2

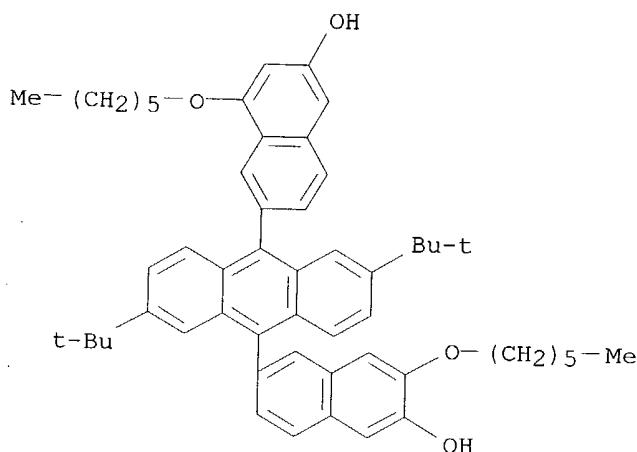
CRN 124-04-9  
CMF C6 H10 O4



RN 337370-75-9 HCA  
CN Octanedioic acid, polymer with 6-[2,6-bis(1,1-dimethylethyl)-10-[8-(hexyloxy)-6-hydroxy-2-naphthalenyl]-9-anthracenyl]-3-(hexyloxy)-2-naphthalenol (9CI) (CA INDEX NAME)

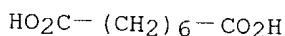
CM 1

CRN 337370-74-8  
CMF C54 H62 O4



CM 2

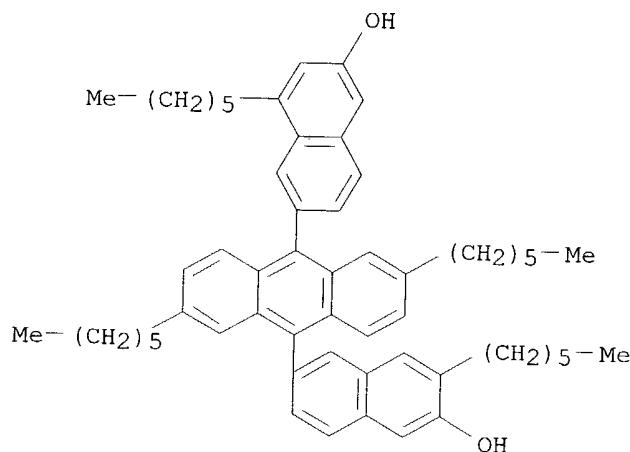
CRN 505-48-6  
CMF C8 H14 O4



RN 337370-78-2 HCA  
CN Decanedioic acid, polymer with 6-[2,6-dihexyl-10-(8-hexyl-6-hydroxy-2-naphthalenyl)-9-anthracenyl]-3-hexyl-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

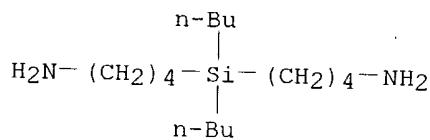
CRN 337370-77-1  
CMF C58 H70 O2



CM 2

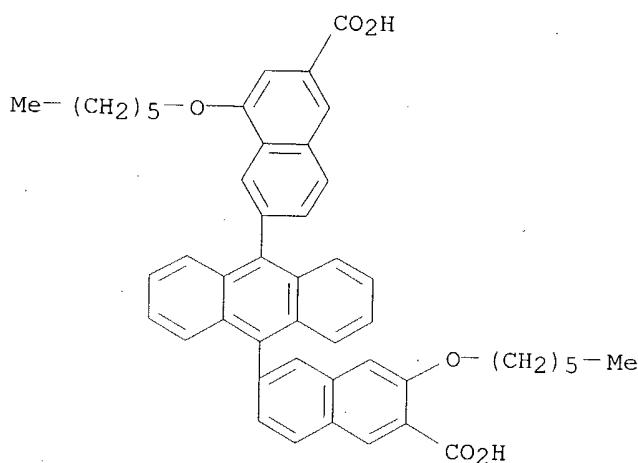
CRN 111-20-6  
CMF C<sub>10</sub> H<sub>18</sub> O<sub>4</sub>HO<sub>2</sub>C-(CH<sub>2</sub>)<sub>8</sub>-CO<sub>2</sub>HRN 337370-84-0 HCA  
CN 2-Naphthalenecarboxylic acid, 6-[10-[6-carboxy-8-(hexyloxy)-2-naphthalenyl]-9-anthracenyl]-3-(hexyloxy)-, polymer with 4,4'-(dibutylsilylene)bis[1-butanamine] (9CI) (CA INDEX NAME)

CM 1

CRN 337370-83-9  
CMF C<sub>16</sub> H<sub>38</sub> N<sub>2</sub> Si

CM 2

CRN 337370-82-8  
CMF C<sub>48</sub> H<sub>46</sub> O<sub>6</sub>



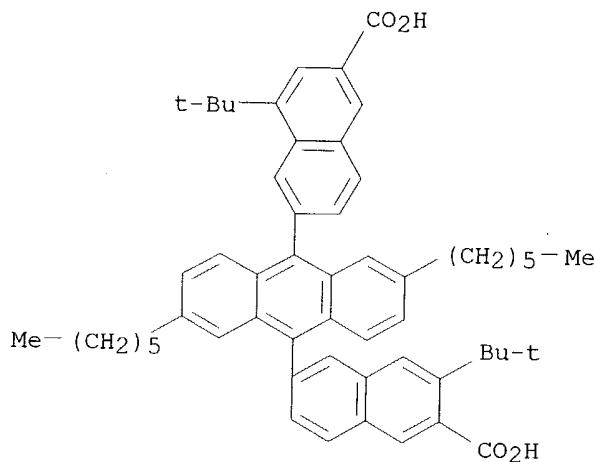
RN 337370-87-3 HCA

CN 2-Naphthalenecarboxylic acid, 6-[10-[6-carboxy-8-(1,1-dimethylethyl)-2-naphthalenyl]-2,6-dihexyl-9-anthracenyl]-3-(1,1-dimethylethyl)-, polymer with 4,4'-(dibutylsilylene)bis[1-butanamine] (9CI) (CA INDEX NAME)

CM 1

CRN 337370-86-2

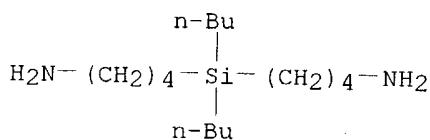
CMF C56 H62 O4



CM 2

CRN 337370-83-9

CMF C16 H38 N2 Si



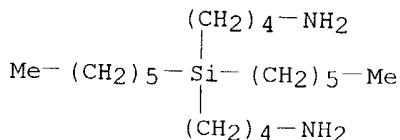
RN 337370-90-8 HCA

CN 2-Naphthalenecarboxylic acid, 6-[10-[6-carboxy-8-(1,1-dimethylethyl)-2-naphthalenyl]-2,6-dihexyl-9-anthracenyl]-3-(1,1-dimethylethyl)-, polymer with 4,4'-(dihexylsilylene)bis[1-butanamine] (9CI) (CA INDEX NAME)

CM 1

CRN 337370-89-5

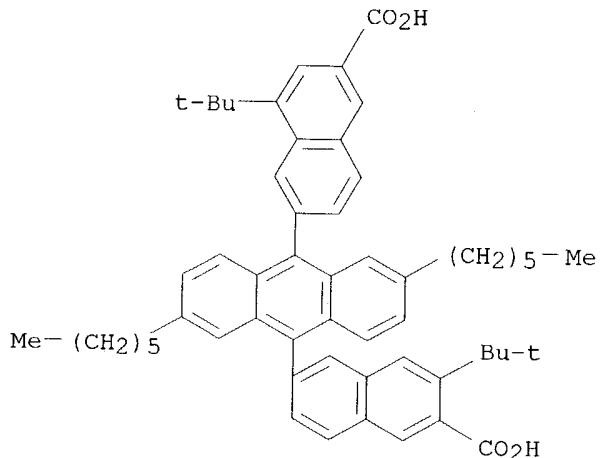
CMF C20 H46 N2 Si



CM 2

CRN 337370-86-2

CMF C56 H62 O4



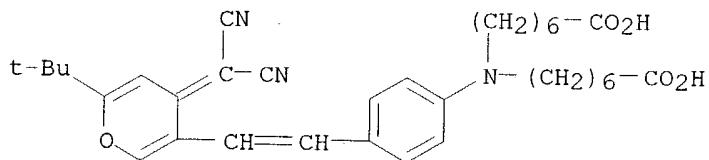
RN 337370-93-1 HCA

CN Heptanoic acid, 7,7'-[{4-[2-[4-(dicyanomethylene)-6-(1,1-dimethylethyl)-4H-pyran-3-yl]ethenyl]phenyl}imino]bis-, polymer with 3-[{(2-ethylhexyl)oxy]-6-[10-[8-[(2-ethylhexyl)oxy]-6-hydroxy-2-naphthalenyl]-9-anthracenyl]-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

CRN 337370-92-0

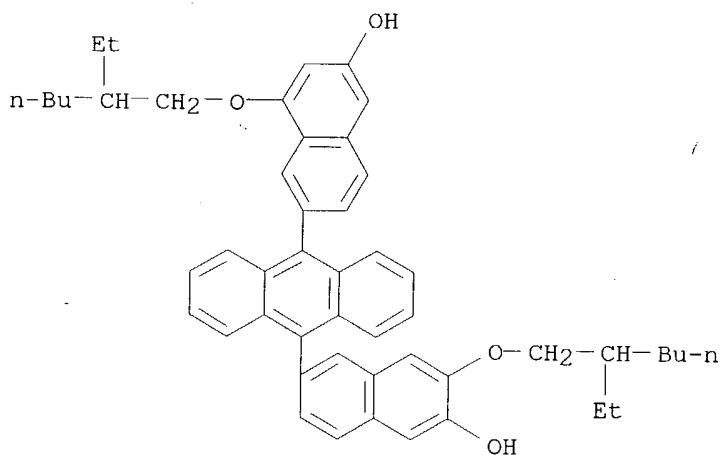
CMF C34 H43 N3 O5



CM 2

CRN 337369-44-5

CMF C50 H54 O4



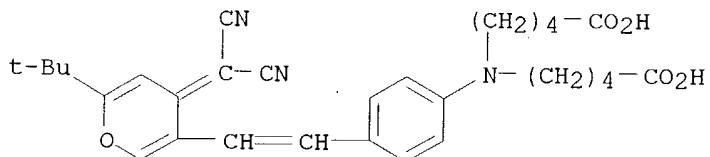
RN 337370-97-5 HCA

CN Pentanoic acid, 5,5'-[ [4-[2-[4-(dicyanomethylene)-6-(1,1-dimethylethyl)-4H-pyran-3-yl]ethenyl]phenyl]imino]bis-, polymer with 3-[(2-ethylhexyl)oxy]-6-[10-[8-[(2-ethylhexyl)oxy]-6-hydroxy-2-naphthalenyl]-2,6-dihexyl-9-anthracenyl]-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

CRN 337370-96-4

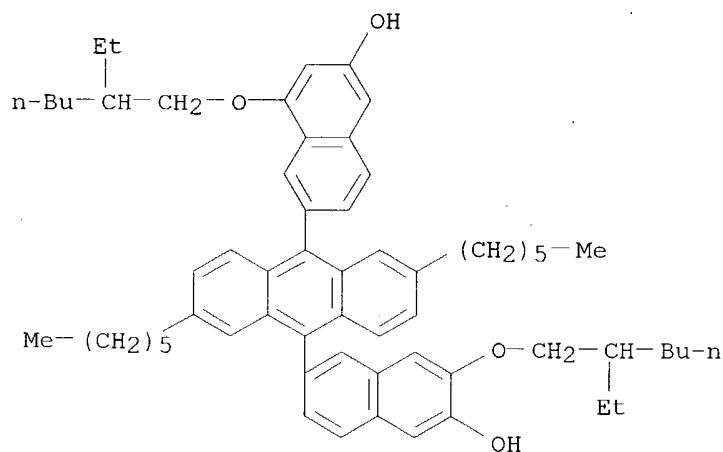
CMF C30 H35 N3 O5



CM 2

CRN 337370-95-3

CMF C62 H78 O4



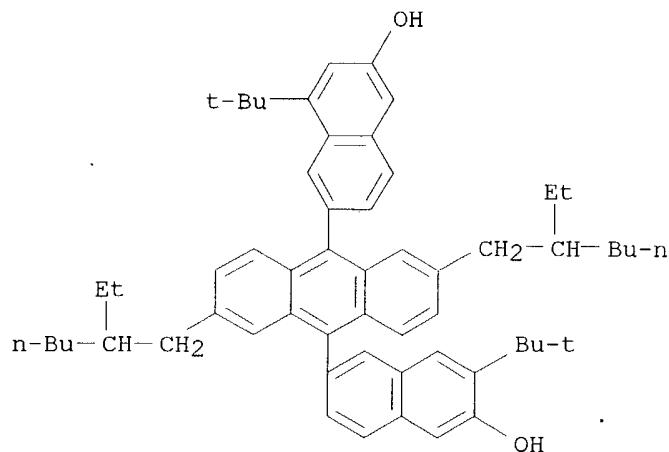
RN 337371-00-3 HCA

CN Pentanoic acid, 5,5'-[{4-[2-[4-(dicyanomethylene)-6-(1,1-dimethylethyl)-4H-pyran-3-yl]ethenyl]phenyl}imino]bis-, polymer with 3-(1,1-dimethylethyl)-6-[10-[8-(1,1-dimethylethyl)-6-hydroxy-2-naphthalenyl]-2,6-bis(2-ethylhexyl)-9-anthracenyl]-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

CRN 337370-99-7

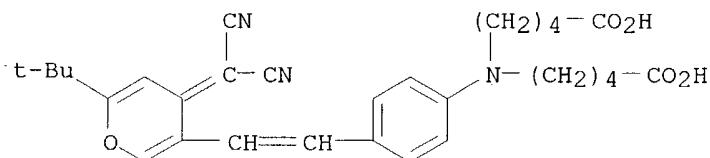
CMF C58 H70 O2



CM 2

CRN 337370-96-4

CMF C30 H35 N3 O5



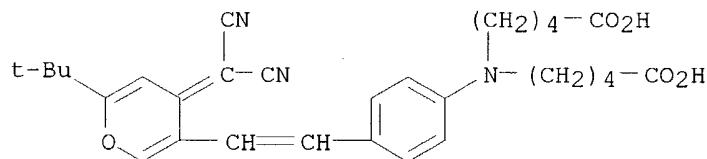
RN 337371-01-4 HCA

CN Pentanoic acid, 5,5'-[{4-[2-[4-(dicyanomethylene)-6-(1,1-dimethylethyl)-4H-pyran-3-yl]ethenyl}phenyl]imino]bis-, polymer with 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis[2-naphthalenol] (9CI) (CA INDEX NAME)

CM 1

CRN 337370-96-4

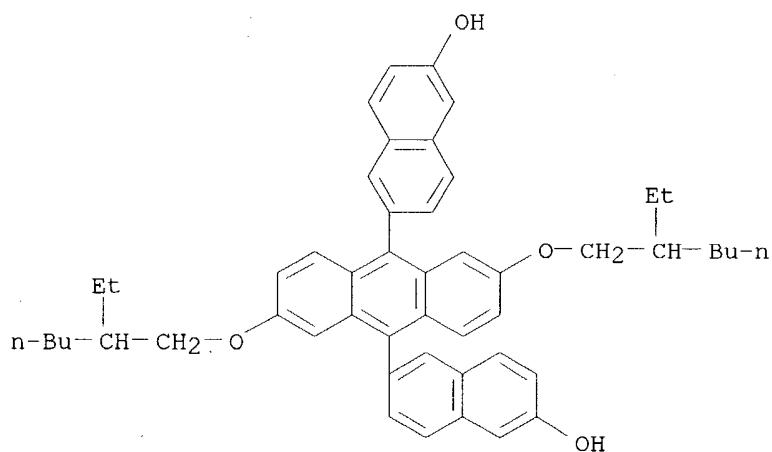
CMF C30 H35 N3 O5



CM 2

CRN 337369-35-4

CMF C50 H54 O4

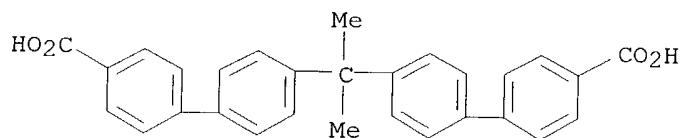


RN 337371-04-7 HCA

CN [1,1'-Biphenyl]-4-carboxylic acid, 4',4'''-(1-methylethyldene)bis-, polymer with 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis[2-naphthalenol] (9CI) (CA INDEX NAME)

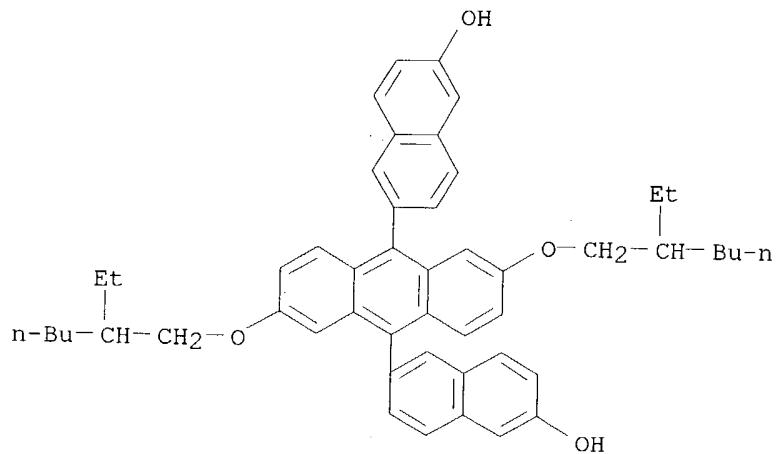
CM 1

CRN 337371-03-6  
CMF C29 H24 O4



CM 2

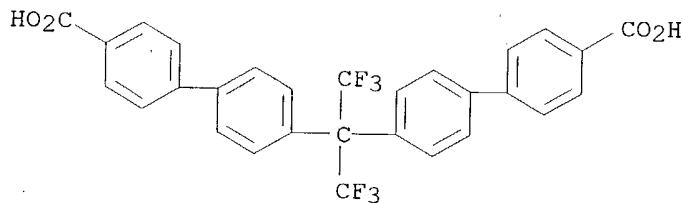
CRN 337369-35-4  
CMF C50 H54 O4



RN 337371-08-1 HCA  
CN [1,1'-Biphenyl]-4-carboxylic acid, 4',4'''-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis-, polymer with 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis[2-naphthalenol] (9CI) (CA INDEX NAME)

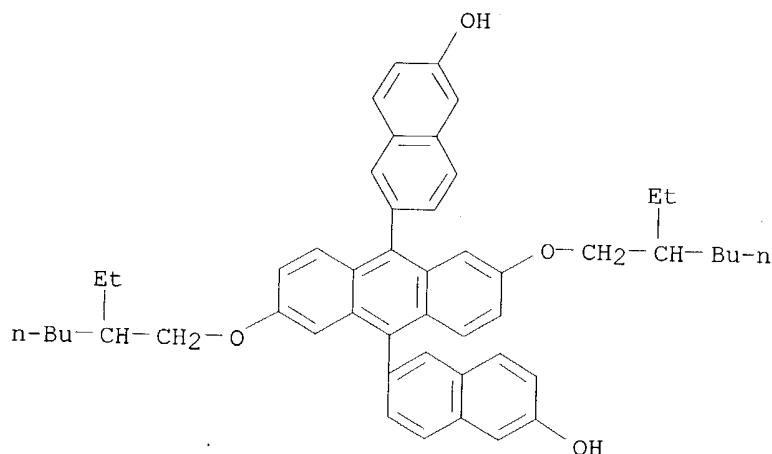
CM 1

CRN 337371-07-0  
CMF C29 H18 F6 O4



CM 2

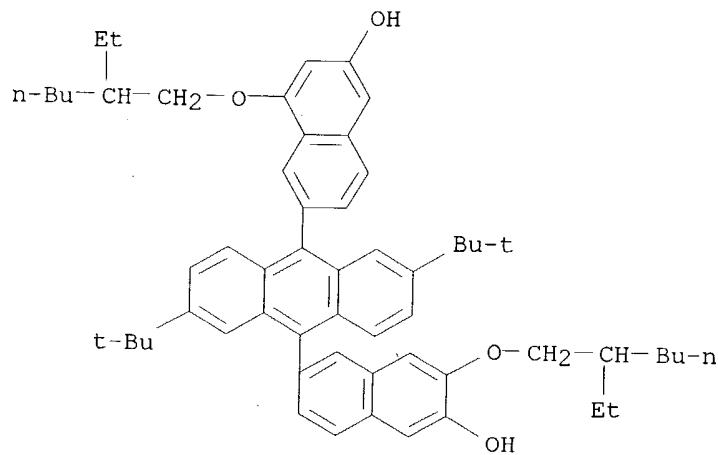
CRN 337369-35-4  
 CMF C50 H54 O4



RN 337371-10-5 HCA  
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4',4'''-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis-, polymer with 6-[2,6-bis(1,1-dimethylethyl)-10-[8-[(2-ethylhexyl)oxy]-6-hydroxy-2-naphthalenyl]-9-anthracenyl]-3-[(2-ethylhexyl)oxy]-2-naphthalenol (9CI) (CA INDEX NAME)

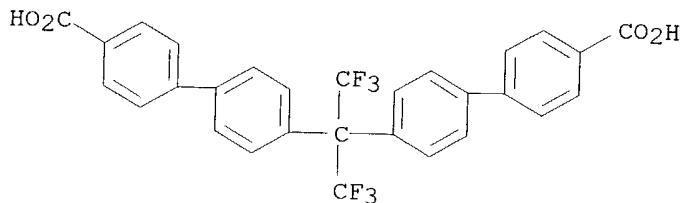
CM 1

CRN 337371-09-2  
 CMF C58 H70 O4



CM 2

CRN 337371-07-0  
 CMF C29 H18 F6 O4



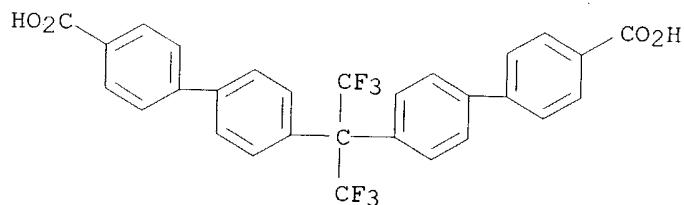
RN 337371-11-6 HCA

CN [1,1'-Biphenyl]-4-carboxylic acid, 4',4'''-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis-, polymer with 6-[2,6-dihexyl-10-[8-(hexyloxy)-6-hydroxy-2-naphthalenyl]-9-anthracenyl]-3-(hexyloxy)-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

CRN 337371-07-0

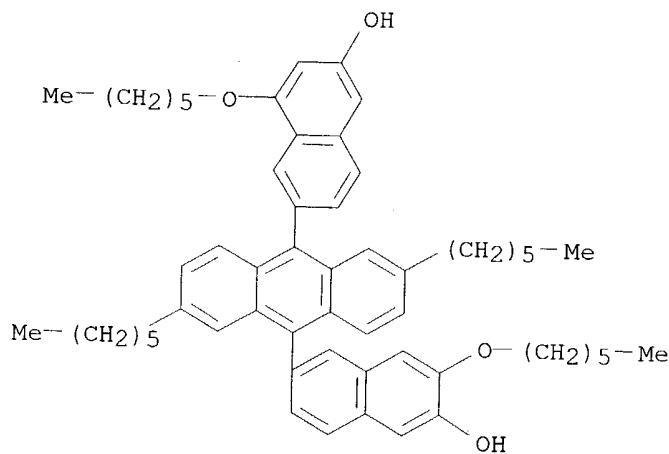
CMF C29 H18 F6 O4



CM 2

CRN 337370-71-5

CMF C58 H70 O4

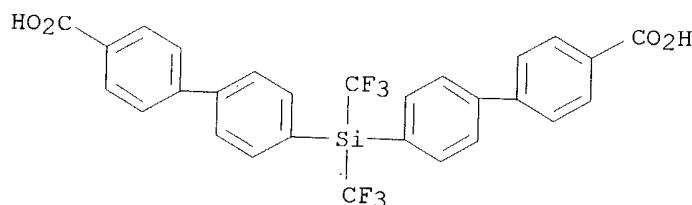


RN 337371-13-8 HCA

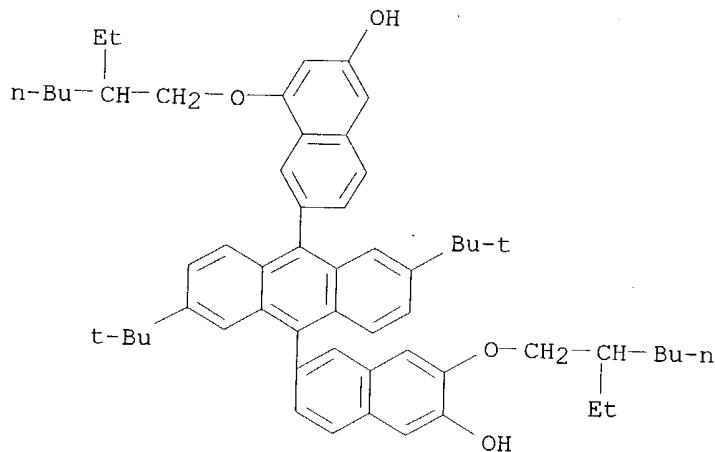
CN [1,1'-Biphenyl]-4-carboxylic acid, 4,4'-[bis(trifluoromethyl)silylene]bis-, polymer with 6-[2,6-bis(1,1-dimethylpropyl)-10-[8-[(2-ethylhexyl)oxy]-6-hydroxy-2-naphthalenyl]-9-anthracenyl]-3-[(2-ethylhexyl)oxy]-2-

naphthalenol (9CI) (CA INDEX NAME)

CM 1

CRN 337371-12-7  
CMF C28 H18 F6 O4 Si

CM 2

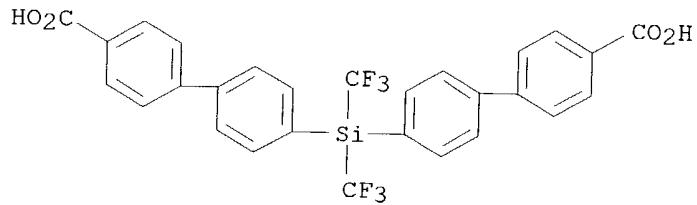
CRN 337371-09-2  
CMF C58 H70 O4

RN 337371-14-9 HCA

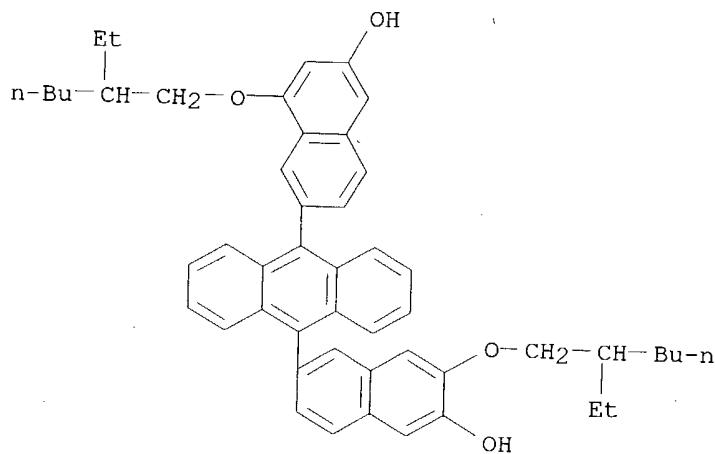
CN [1,1'-Biphenyl]-4-carboxylic acid, 4,4'-[bis(trifluoromethyl)silylene]bis-, polymer with 3-[(2-ethylhexyl)oxy]-6-[10-[8-[(2-ethylhexyl)oxy]-6-hydroxy-2-naphthalenyl]-9-anthracyl]-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

CRN 337371-12-7  
CMF C28 H18 F6 O4 Si



CM 2

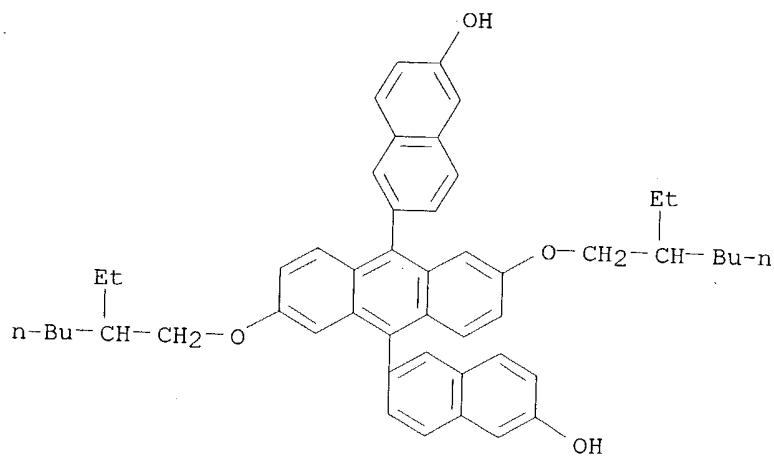
CRN 337369-44-5  
CMF C50 H54 O4

RN 337371-16-1 HCA

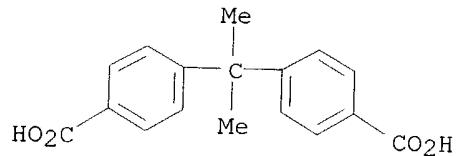
CN Benzoic acid, 4,4'-(1-methylethyldene)bis-, polymer with  
6,6'-(2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl)bis[2-naphthalenol]  
(9CI) (CA INDEX NAME)

CM 1

CRN 337369-35-4  
CMF C50 H54 O4

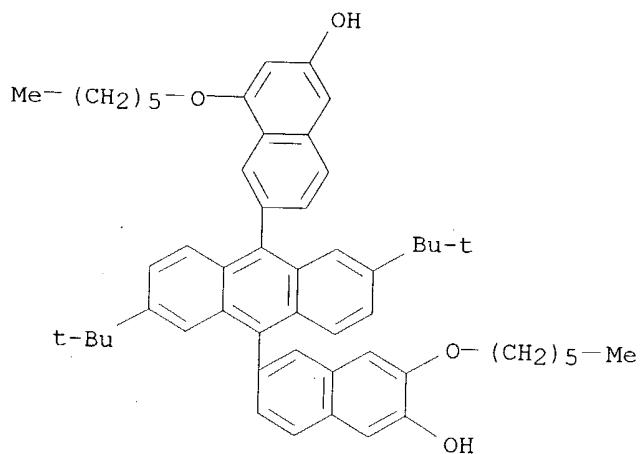


CM 2

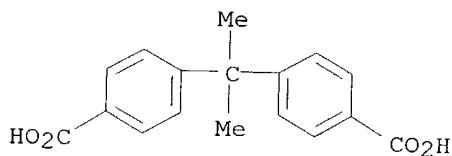
CRN 7425-84-5  
CMF C17 H16 O4RN 337371-18-3 HCA  
CN Benzoic acid, 4,4'-(1-methylethylidene)bis-, polymer with  
6-[2,6-bis(1,1-dimethylethyl)-10-[8-(hexyloxy)-6-hydroxy-2-naphthalenyl]-9-  
anthracenyl]-3-(hexyloxy)-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

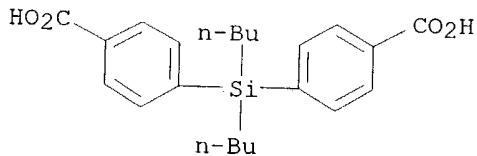
CRN 337370-74-8  
CMF C54 H62 O4



CM 2

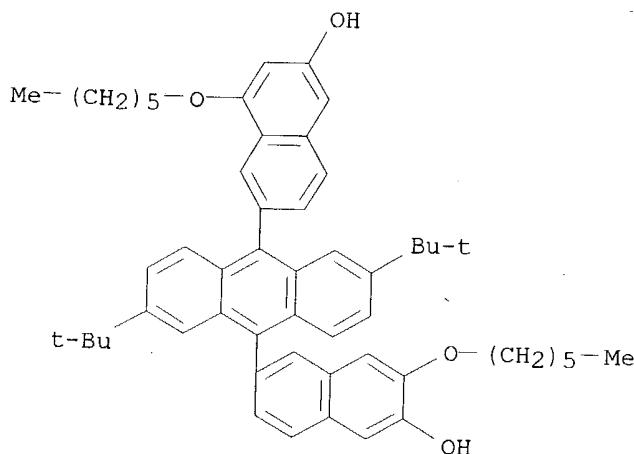
CRN 7425-84-5  
CMF C17 H16 O4RN 337371-20-7 HCA  
CN Benzoic acid, 4,4'-(dibutylsilylene)bis-, polymer with  
6-[2,6-bis(1,1-dimethylethyl)-10-[8-(hexyloxy)-6-hydroxy-2-naphthalenyl]-9-anthracenyl]-3-(hexyloxy)-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

CRN 337371-19-4  
CMF C22 H28 O4 Si

CM 2

CRN 337370-74-8  
CMF C54 H62 O4



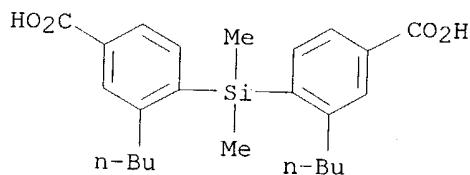
RN 337371-24-1 HCA

CN Benzoic acid, 4,4'-(dimethylsilylene)bis[3-butyl-, polymer with 3-[(2-ethylhexyl)oxy]-6-[10-[8-[(2-ethylhexyl)oxy]-6-hydroxy-2-naphthalenyl]-9-anthracenyl]-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

CRN 337371-23-0

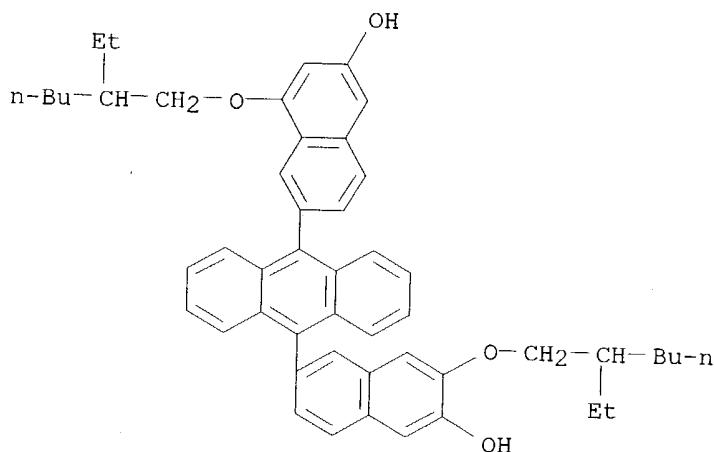
CMF C24 H32 O4 Si



CM 2

CRN 337369-44-5

CMF C50 H54 04



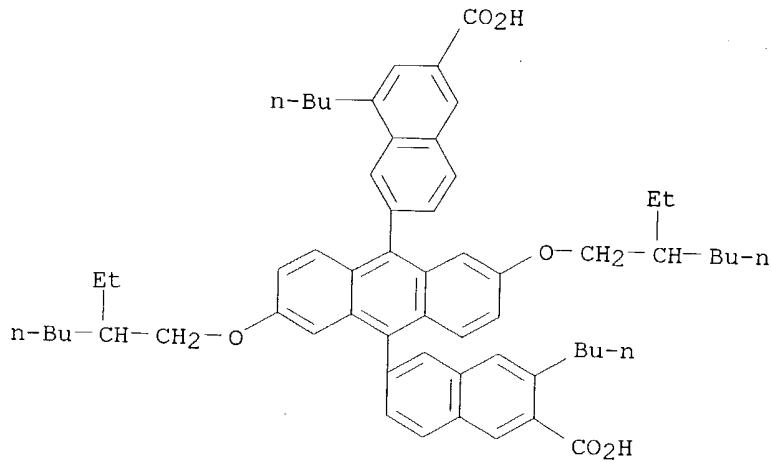
RN 337371-26-3 HCA

CN 2-Naphthalenecarboxylic acid, 3-butyl-6-[10-(8-butyl-6-carboxy-2-naphthalenyl)-2,6-bis[(2-ethylhexyl)oxy]-9-anthracyl]-, polymer with N-(4-aminophenyl)-N-phenyl-1,4-benzenediamine (9CI) (CA INDEX NAME)

CM 1

CRN 337371-25-2

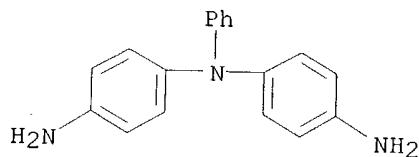
CMF C60 H70 O6



CM 2

CRN 4117-90-2

CMF C18 H17 N3



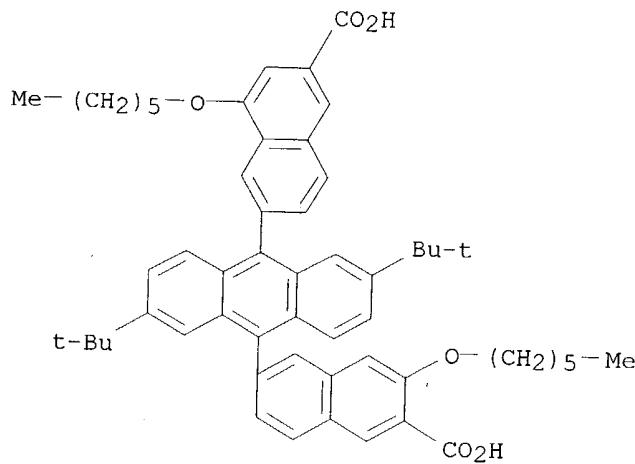
RN 337371-29-6 HCA

CN 2-Naphthalenecarboxylic acid, 6-[10-[6-carboxy-8-(hexyloxy)-2-naphthalenyl]-2,6-bis(1,1-dimethylethyl)-9-anthracenyl]-3-(hexyloxy)-, polymer with N-(4-aminophenyl)-N-phenyl-1,4-benzenediamine (9CI) (CA INDEX NAME)

CM 1

CRN 337371-28-5

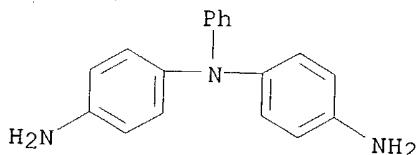
CMF C56 H62 O6



CM 2

CRN 4117-90-2

CMF C18 H17 N3

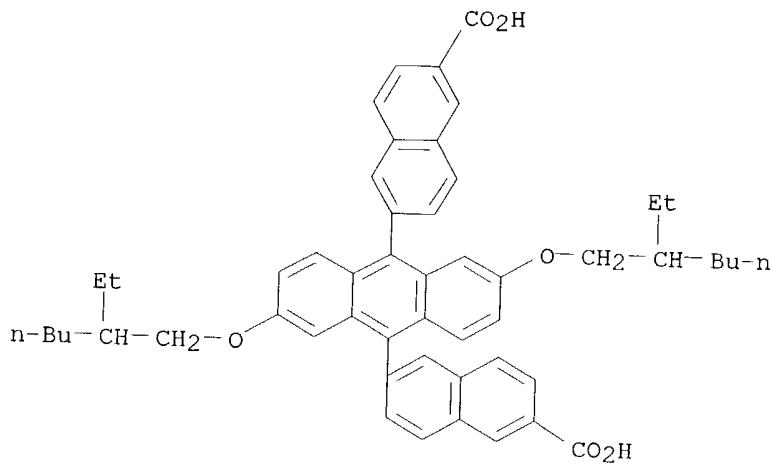


RN 337371-32-1 HCA

CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with N-(4-aminophenyl)-N-butyl-1,4-benzenediamine (9CI) (CA INDEX NAME)

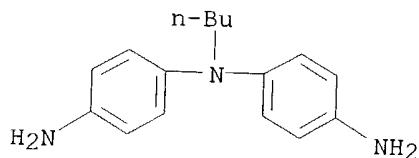
CM 1

CRN 337371-31-0  
 CMF C52 H54 O6



CM 2

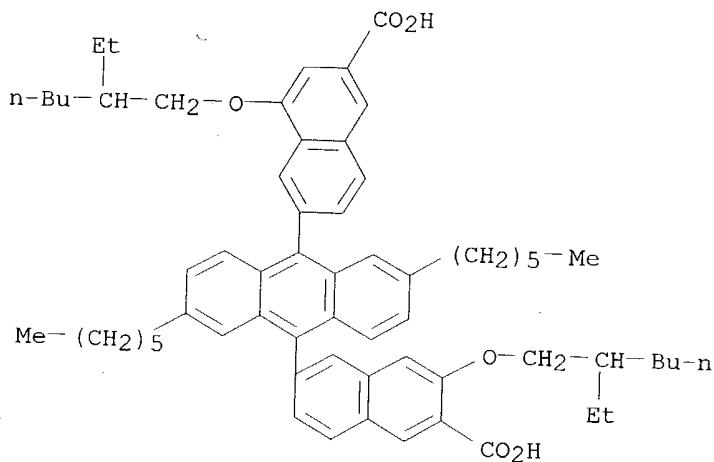
CRN 150810-28-9  
 CMF C16 H21 N3



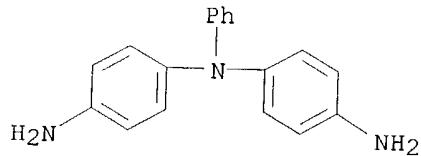
RN 337371-35-4 HCA  
 CN 2-Naphthalenecarboxylic acid, 6-[10-[6-carboxy-8-[(2-ethylhexyl)oxy]-2-naphthalenyl]-2,6-dihexyl-9-anthracyl]-3-[(2-ethylhexyl)oxy]-, polymer with N-(4-aminophenyl)-N-phenyl-1,4-benzenediamine (9CI) (CA INDEX NAME)

CM 1

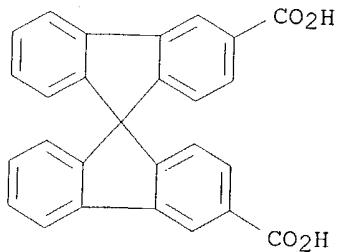
CRN 337371-34-3  
 CMF C64 H78 O6



CM 2

CRN 4117-90-2  
CMF C18 H17 N3RN 337371-38-7 HCA  
CN 9,9'-Spirobi[9H-fluorene]-3,3'-dicarboxylic acid, polymer with  
6,6'-(2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl)bis[2-naphthalenol]  
(9CI) (CA INDEX NAME)

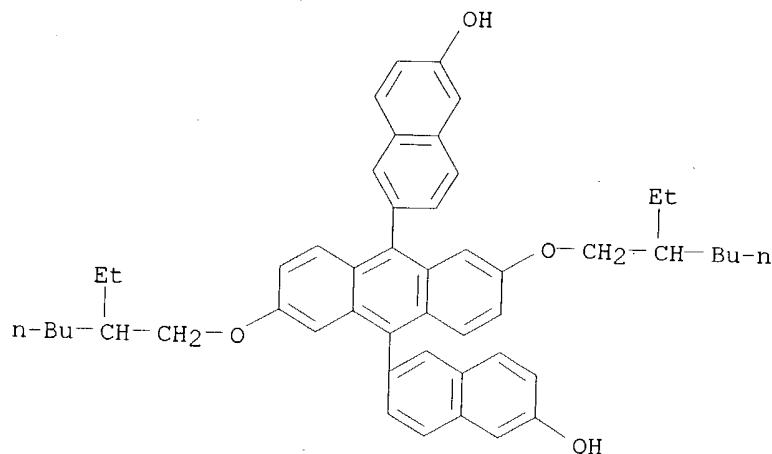
CM 1

CRN 337371-37-6  
CMF C27 H16 O4

CM 2

CRN 337369-35-4

CMF C50 H54 O4



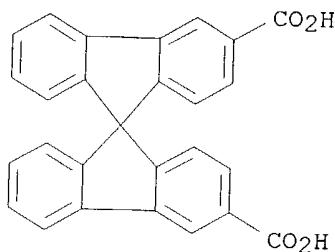
RN 337371-40-1 HCA

CN 9,9'-Spirobi[9H-fluorene]-3,3'-dicarboxylic acid, polymer with  
6-[2,6-bis(1,1-dimethylethyl)-10-[(2-ethylhexyl)oxy]-6-hydroxy-2-  
naphthalenyl]-9-anthracenyl]-3-[(2-ethylhexyl)oxy]-2-naphthalenol (9CI)  
(CA INDEX NAME)

CM 1

CRN 337371-37-6

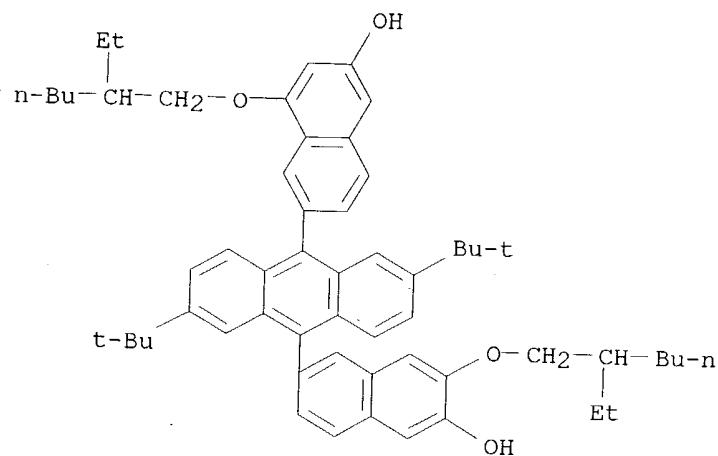
CMF C27 H16 O4



CM 2

CRN 337371-09-2

CMF C58 H70 O4



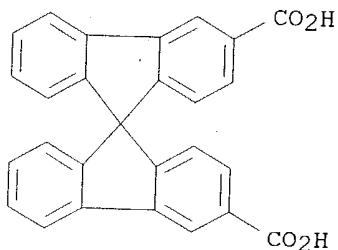
RN 337371-42-3 HCA

CN 9,9'-Spirobi[9H-fluorene]-3,3'-dicarboxylic acid, polymer with  
6-[2,6-dihexyl-10-(8-hexyl-6-hydroxy-2-naphthalenyl)-9-anthracenyl]-3-  
hexyl-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

CRN 337371-37-6

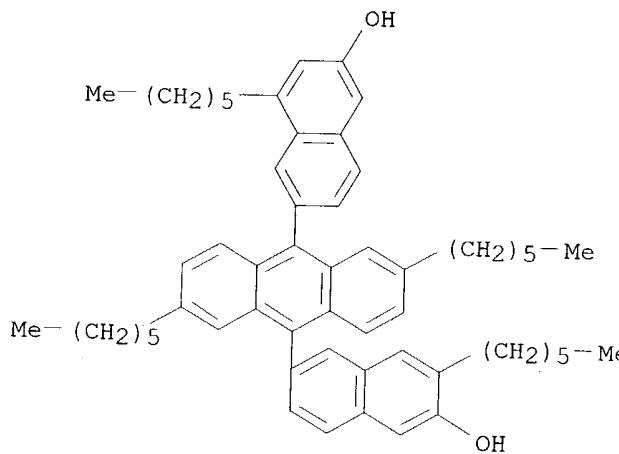
CMF C27 H16 O4



CM 2

CRN 337370-77-1

CMF C58 H70 O2



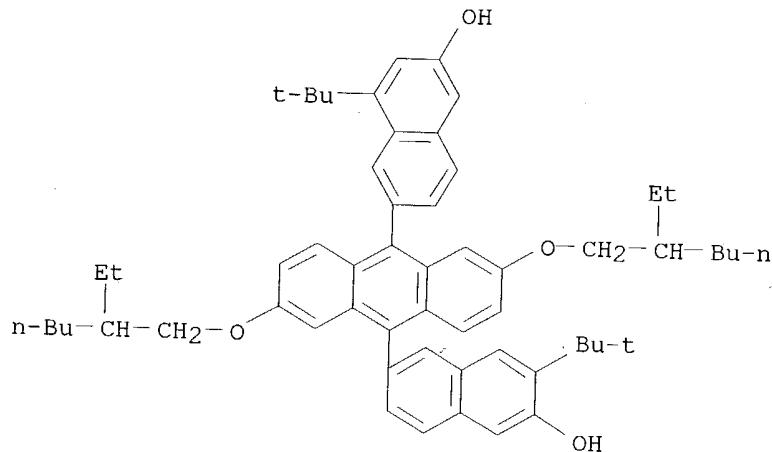
RN 337371-45-6 HCA

CN 9,9'-Spirobi[9H-fluorene]-3,3'-dicarboxylic acid, polymer with  
3-(1,1-dimethylethyl)-6-[10-[8-(1,1-dimethylethyl)-6-hydroxy-2-  
naphthalenyl]-2,6-bis[(2-ethylhexyl)oxy]-9-anthracenyl]-2-naphthalenol  
(9CI) (CA INDEX NAME)

CM 1

CRN 337371-44-5

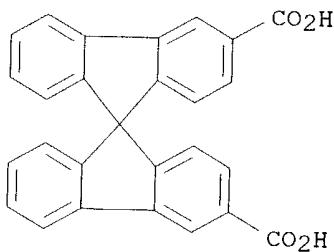
CMF C58 H70 O4



CM 2

CRN 337371-37-6

CMF C27 H16 O4



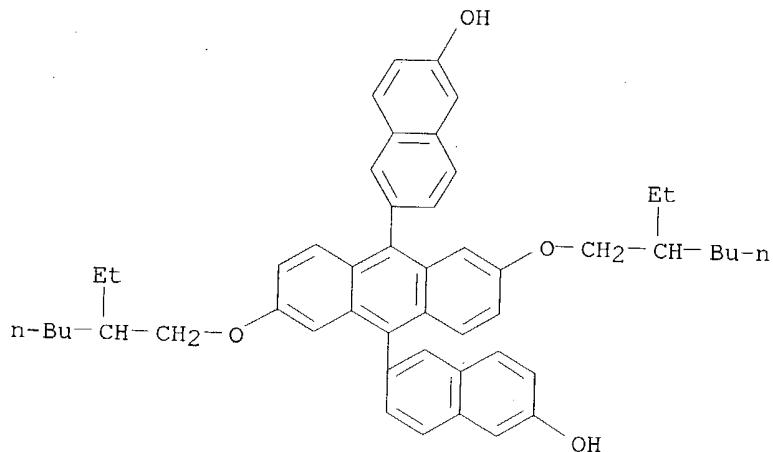
RN 337371-47-8 HCA

CN Benzoic acid, 4,4'-sulfonylbis-, polymer with 6,6'-(2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl)bis[2-naphthalenol] (9CI) (CA INDEX NAME)

CM 1

CRN 337369-35-4

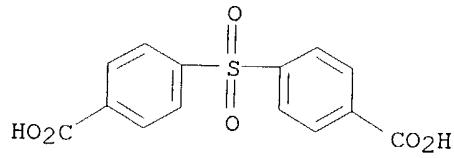
CMF C50 H54 O4



CM 2

CRN 2449-35-6

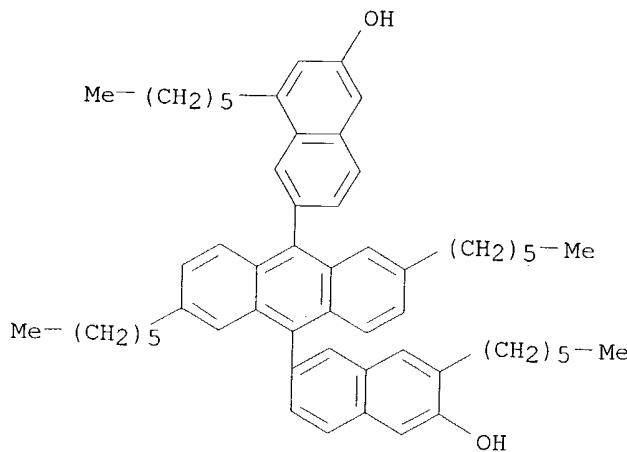
CMF C14 H10 O6 S



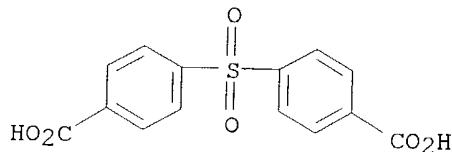
RN 337371-49-0 HCA

CN Benzoic acid, 4,4'-sulfonylbis-, polymer with 6-[2,6-dihexyl-10-(8-hexyl-6-hydroxy-2-naphthalenyl)-9-anthracenyl]-3-hexyl-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

CRN 337370-77-1  
CMF C58 H70 O2

CM 2

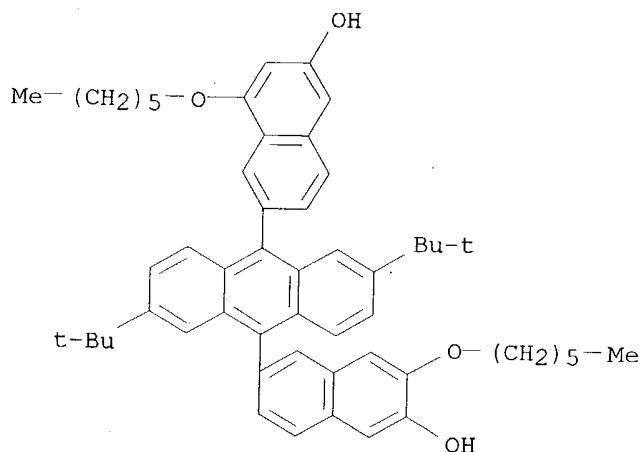
CRN 2449-35-6  
CMF C14 H10 O6 S

RN 337371-52-5 HCA

CN Benzoic acid, 4,4'-sulfonylbis-, polymer with 6-[2,6-bis(1,1-dimethylethyl)-10-[8-(hexyloxy)-6-hydroxy-2-naphthalenyl]-9-anthracenyl]-3-(hexyloxy)-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

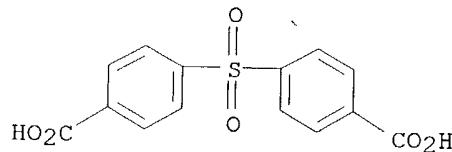
CRN 337370-74-8  
CMF C54 H62 O4



CM 2

CRN 2449-35-6

CMF C14 H10 O6 S



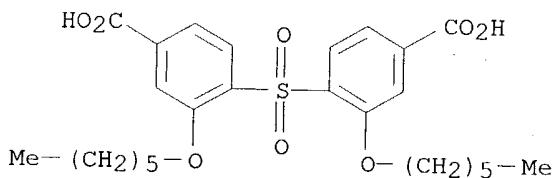
RN 337371-55-8 HCA

CN Benzoic acid, 4,4'-sulfonylbis[3-(hexyloxy)-, polymer with 6-[2,6-bis(1,1-dimethylethyl)-10-[8-(hexyloxy)-6-hydroxy-2-naphthalenyl]-9-anthracenyl]-3-(hexyloxy)-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

CRN 337371-54-7

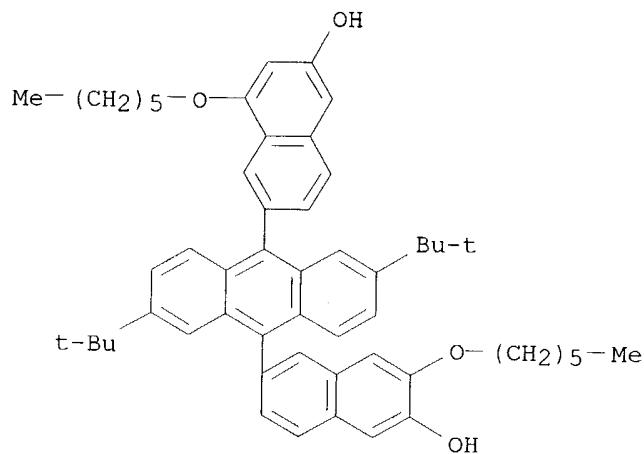
CMF C26 H34 O8 S



CM 2

CRN 337370-74-8

CMF C54 H62 O4



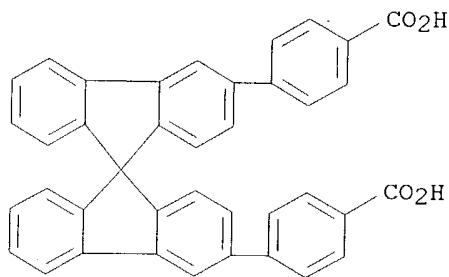
RN 337371-59-2 HCA

CN Benzoic acid, 4,4'-(9,9'-spirobi[9H-fluorene]-3,3'-diyl)bis-, polymer with 6,6'-(2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl)bis[2-naphthalenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 337371-58-1

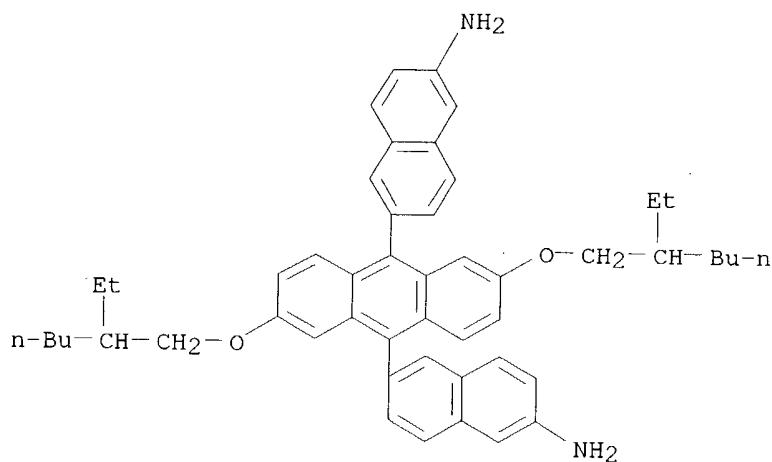
CMF C39 H24 O4



CM 2

CRN 337371-57-0

CMF C50 H56 N2 O2



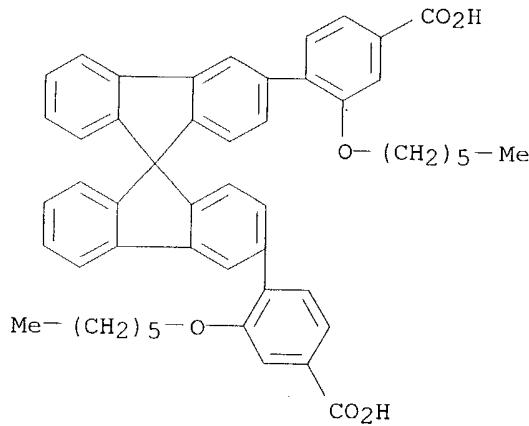
RN 337371-63-8 HCA

CN Benzoic acid, 4,4'-(9,9'-spirobi[9H-fluorene]-3,3'-diyl)bis[3-(hexyloxy)-, polymer with 6-[10-(6-amino-8-hexyl-2-naphthalenyl)-2,6-bis(1,1-dimethylethyl)-9-anthracyl]-3-hexyl-2-naphthalenamine (9CI) (CA INDEX NAME)

CM 1

CRN 337371-68-3

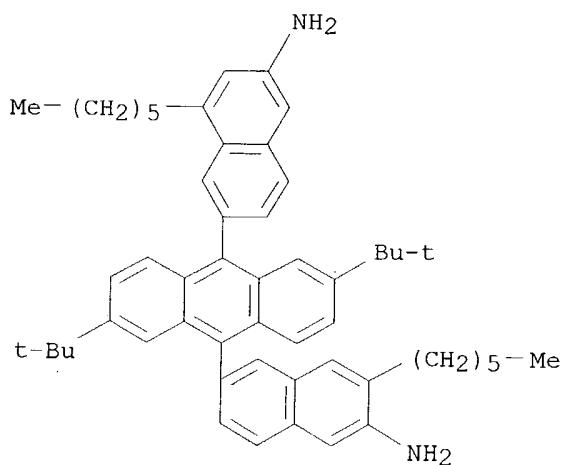
CMF C51 H48 O6



CM 2

CRN 337371-61-6

CMF C54 H64 N2



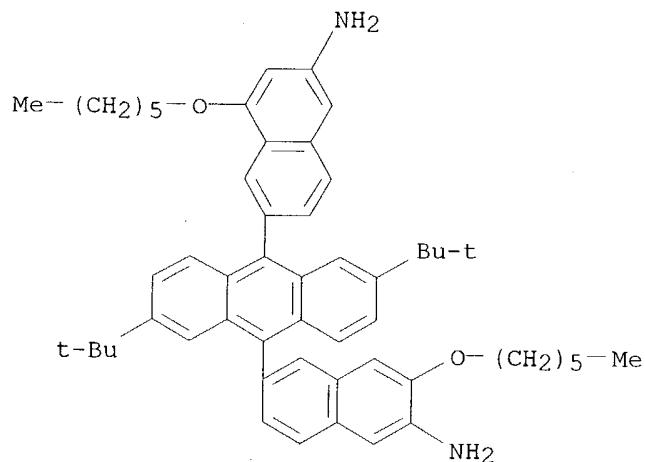
RN 337371-66-1 HCA

CN Benzoic acid, 4,4'-(9,9'-spirobi[9H-fluorene]-3,3'-diyl)bis-, polymer with 6-[10-[(6-amino-8-(hexyloxy)-2-naphthalenyl)-2,6-bis(1,1-dimethylethyl)-9-anthracenyl]-3-(hexyloxy)-2-naphthalenamine (9CI) (CA INDEX NAME)

CM 1

CRN 337371-65-0

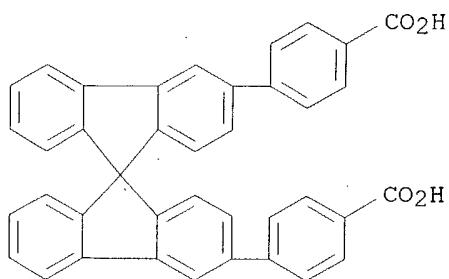
CMF C54 H64 N2 O2



CM 2

CRN 337371-58-1

CMF C39 H24 O4



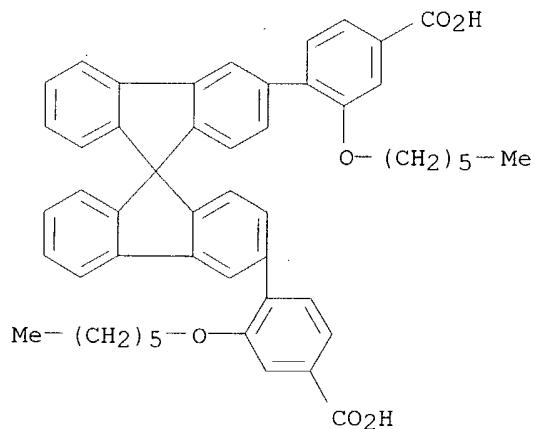
RN 337371-69-4 HCA

CN Benzoic acid, 4,4'-(9,9'-spirobi[9H-fluorene]-3,3'-diyl)bis[3-(hexyloxy)-, polymer with 6,6'-(2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl)bis[2-naphthalenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 337371-68-3

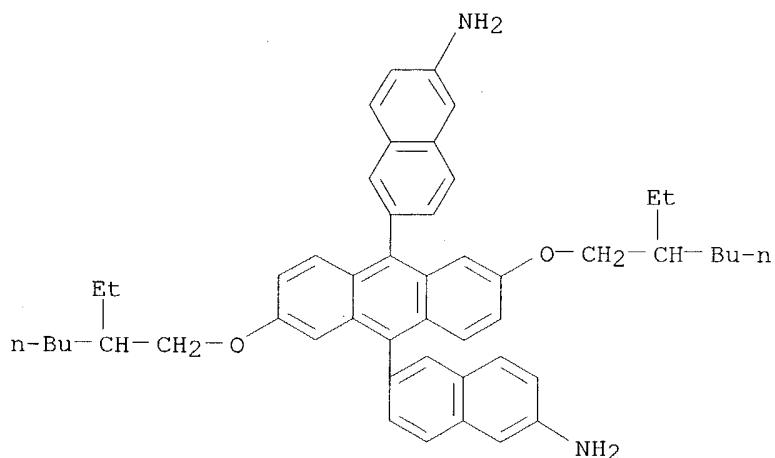
CMF C51 H48 O6



CM 2

CRN 337371-57-0

CMF C50 H56 N2 O2



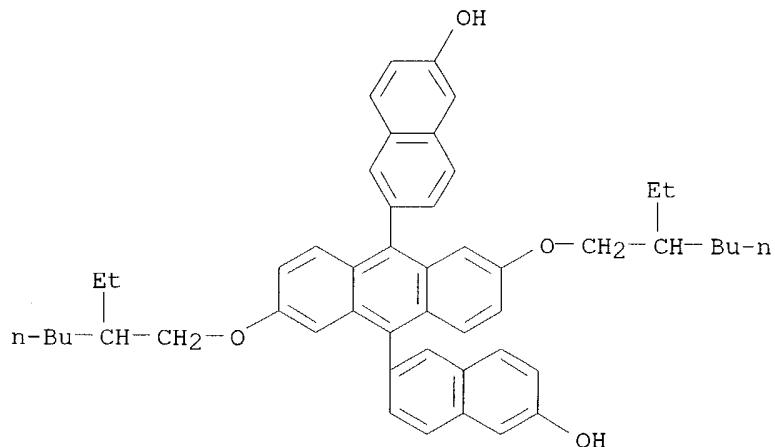
RN 337371-71-8 HCA

CN 1,3-Benzenedicarboxylic acid, 5-(hexyloxy)-, polymer with  
6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis[2-naphthalenol]  
(9CI) (CA INDEX NAME)

CM 1

CRN 337369-35-4

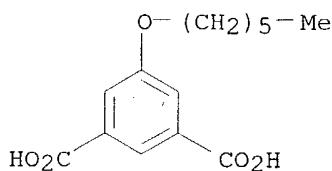
CMF C50 H54 O4



CM 2

CRN 149205-56-1

CMF C14 H18 O5



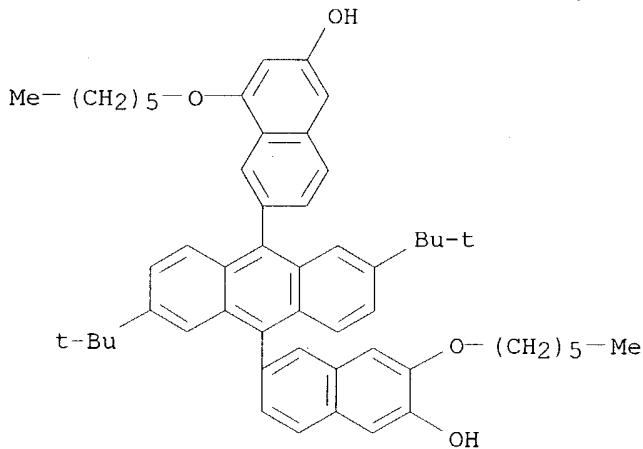
RN 337371-76-3 HCA

CN 1,3-Benzenedicarboxylic acid, 5-(octyloxy)-, polymer with  
6-[2,6-bis(1,1-dimethylethyl)-10-[8-(hexyloxy)-6-hydroxy-2-naphthalenyl]-9-  
anthracenyl]-3-(hexyloxy)-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

CRN 337370-74-8

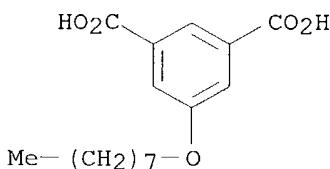
CMF C54 H62 O4



CM 2

CRN 181627-67-8

CMF C16 H22 O5

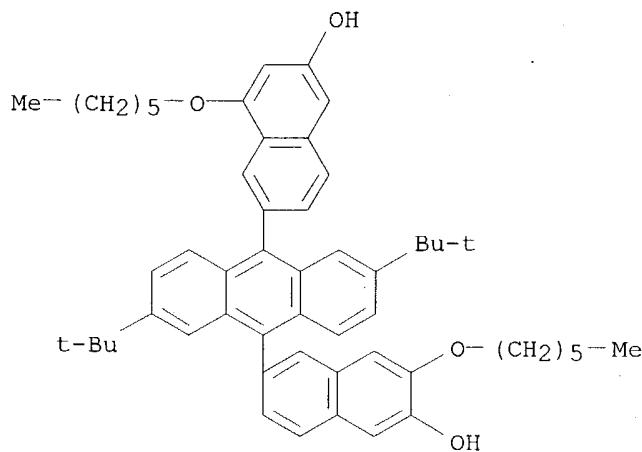


RN 337371-78-5 HCA

CN 1,3-Benzenedicarboxylic acid, 5-(decyloxy)-, polymer with  
6-[2,6-bis(1,1-dimethylethyl)-10-[8-(hexyloxy)-6-hydroxy-2-naphthalenyl]-9-  
anthracenyl]-3-(hexyloxy)-2-naphthalenol (9CI) (CA INDEX NAME)

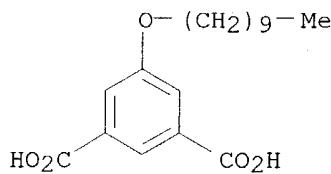
CM 1

CRN 337370-74-8  
 CMF C54 H62 O4



CM 2

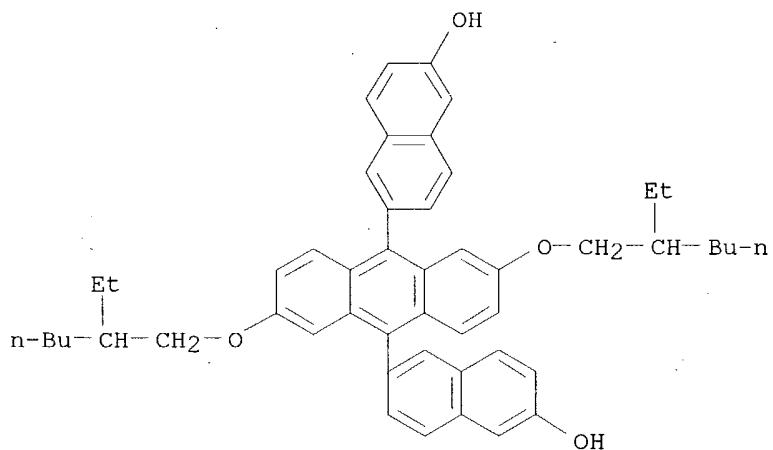
CRN 153117-87-4  
 CMF C18 H26 O5



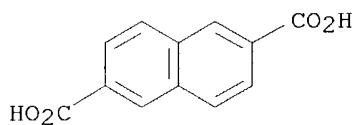
RN 337371-80-9 HCA  
 CN 2,6-Naphthalenedicarboxylic acid, polymer with 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis[2-naphthalenol] (9CI) (CA INDEX NAME)

CM 1

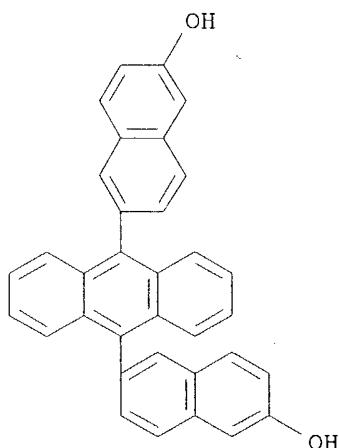
CRN 337369-35-4  
 CMF C50 H54 O4



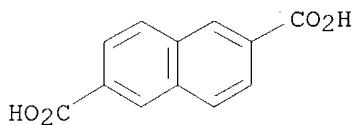
CM 2

CRN 1141-38-4  
CMF C12 H8 O4RN 337371-82-1 HCA  
CN 2,6-Naphthalenedicarboxylic acid, polymer with 6,6'-(9,10-antracenediyl)bis[2-naphthalenol] (9CI) (CA INDEX NAME)

CM 1

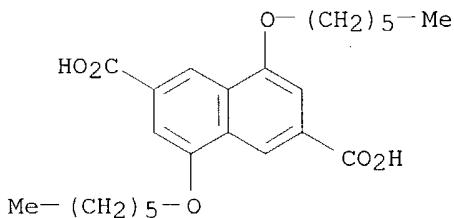
CRN 337369-40-1  
CMF C34 H22 O2

CM 2

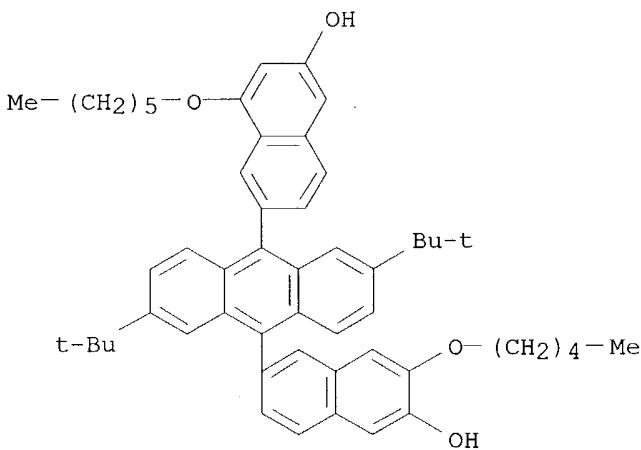
CRN 1141-38-4  
CMF C12 H8 O4

RN 337371-86-5 HCA  
 CN 2,6-Naphthalenedicarboxylic acid, 4,8-bis(hexyloxy)-, polymer with  
 6-[2,6-bis(1,1-dimethylethyl)-10-[8-(hexyloxy)-6-hydroxy-2-naphthalenyl]-9-  
 anthracenyl]-3-(pentyloxy)-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

CRN 337371-85-4  
CMF C24 H32 O6

CM 2

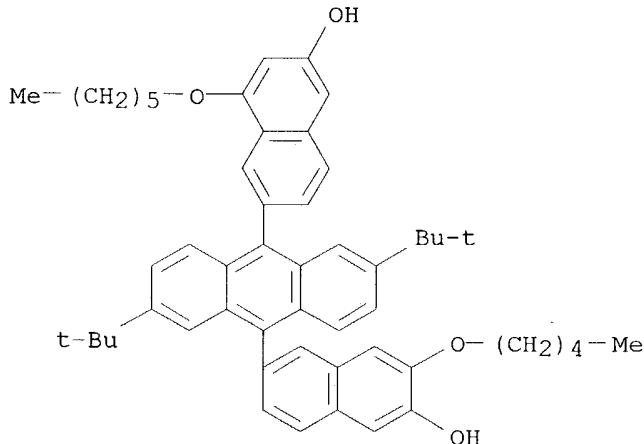
CRN 337371-84-3  
CMF C53 H60 O4

RN 337371-87-6 HCA  
 CN 2,6-Naphthalenedicarboxylic acid, polymer with 6-[2,6-bis(1,1-

dimethylethyl)-10-[8-(hexyloxy)-6-hydroxy-2-naphthalenyl]-9-anthracenyl]-3-(pentyloxy)-2-naphthalenol (9CI) (CA INDEX NAME)

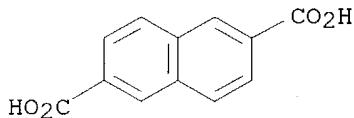
CM 1

CRN 337371-84-3  
CMF C53 H60 O4



CM 2

CRN 1141-38-4  
CMF C12 H8 O4

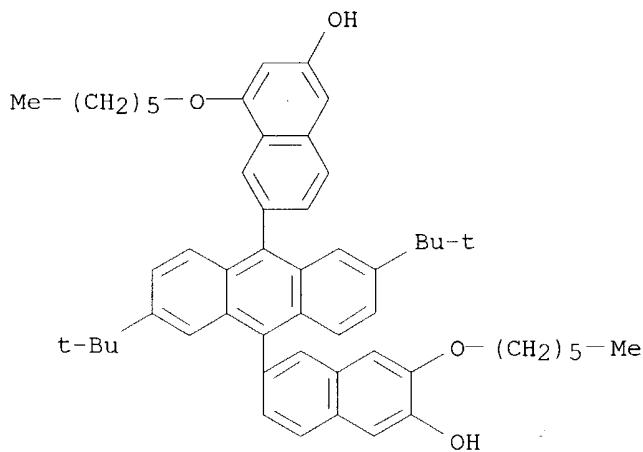


RN 337371-88-7 HCA

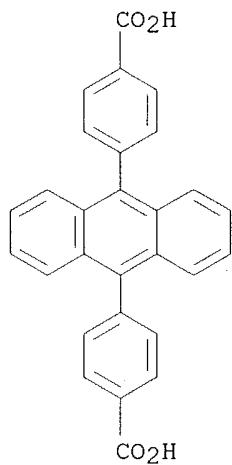
CN Benzoic acid, 4,4'-(9,10-anthracenediyl)bis-, polymer with 6-[2,6-bis(1,1-dimethylpropyl)-10-[8-(hexyloxy)-6-hydroxy-2-naphthalenyl]-9-anthracenyl]-3-(hexyloxy)-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

CRN 337370-74-8  
CMF C54 H62 O4

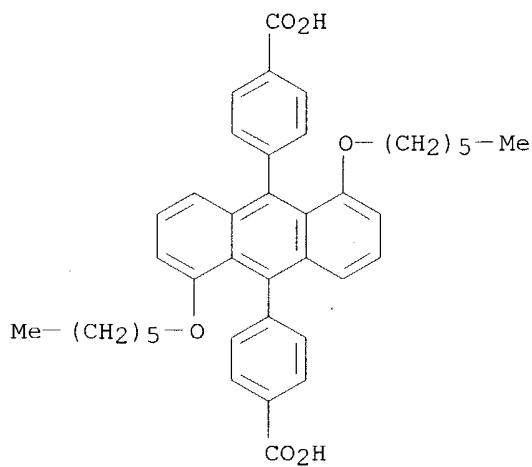


CM 2

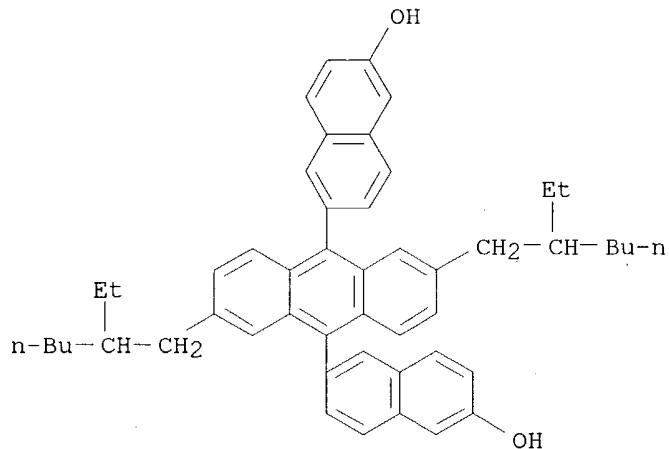
CRN 42824-53-3  
CMF C28 H18 O4RN 337371-92-3 HCA  
CN Benzoic acid, 4,4'-[1,5-bis(hexyloxy)-9,10-anthracenediyl]bis-, polymer with 6,6'-[2,6-bis(2-ethylhexyl)-9,10-anthracenediyl]bis[2-naphthalenol] (9CI) (CA INDEX NAME)

CM 1

CRN 337371-91-2  
CMF C40 H42 O6



CM 2

CRN 337371-90-1  
CMF C50 H54 O2

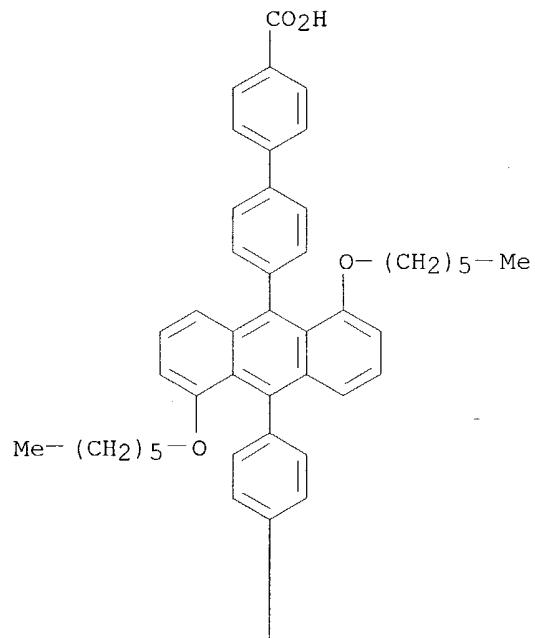
RN 337371-96-7 HCA

CN [1,1'-Biphenyl]-4-carboxylic acid, 4',4'''-[1,5-bis(hexyloxy)-9,10-anthracenediyl]bis-, polymer with 6-[2,6-bis[(2-ethylhexyl)oxy]-10-[8-(hexyloxy)-6-hydroxy-2-naphthalenyl]-9-anthracenyl]-3-(hexyloxy)-2-naphthalenol (9CI) (CA INDEX NAME)

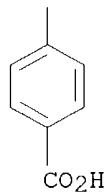
CM 1

CRN 337371-95-6  
CMF C52 H50 O6

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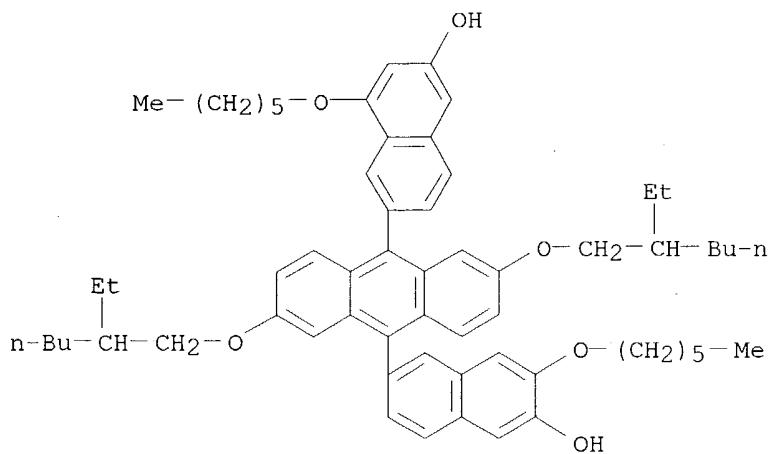
PAGE 2-A



CM 2

CRN 337371-94-5

CMF C62 H78 O6



RN 337371-97-8 HCA

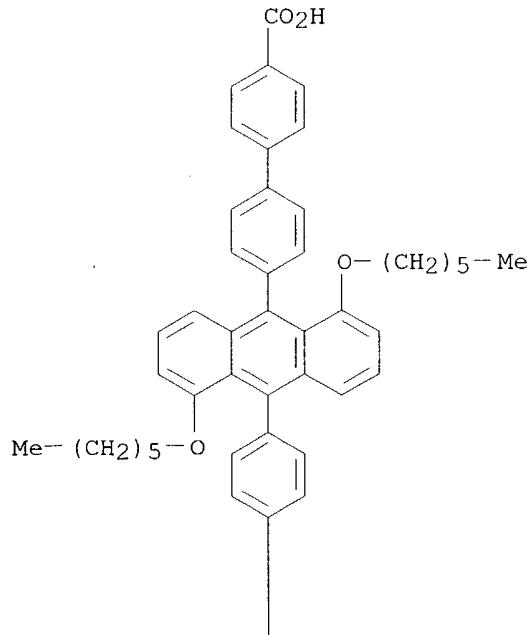
CN [1,1'-Biphenyl]-4-carboxylic acid, 4',4'''-[1,5-bis(hexyloxy)-9,10-anthracenediyl]bis-, polymer with 6-[2,6-dihexyl-10-[8-(hexyloxy)-6-hydroxy-2-naphthalenyl]-9-anthracenyl]-3-(hexyloxy)-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

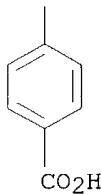
CRN 337371-95-6

CMF C52 H50 O6

PAGE 1-A

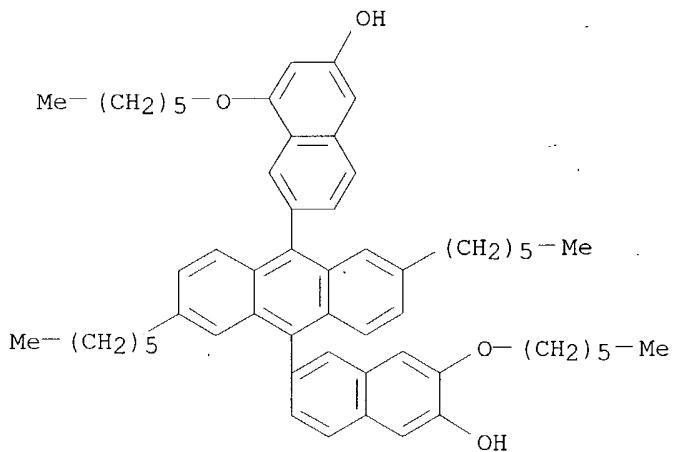


PAGE 2-A



CM 2

CRN 337370-71-5  
CMF C58 H70 04



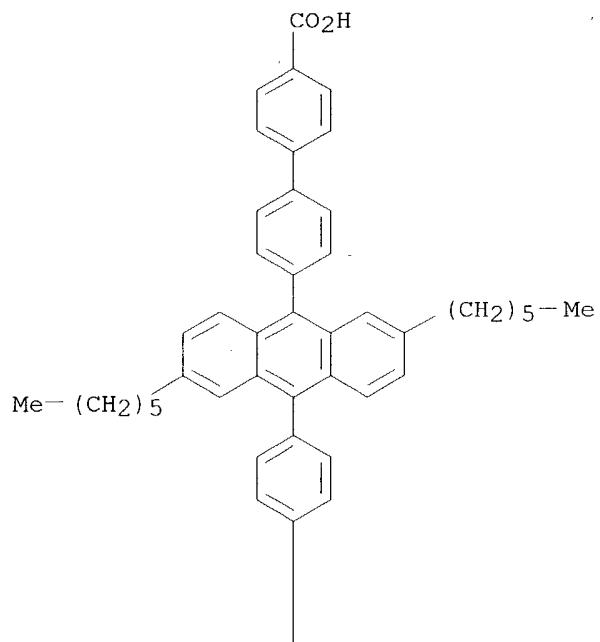
RN 337371-99-0 HCA

CN [1,1'-Biphenyl]-4-carboxylic acid, 4',4'''-(2,6-dihexyl-9,10-anthracenediyl)bis-, polymer with 6,6'-(2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl)bis[2-naphthalenol] (9CI) (CA INDEX NAME)

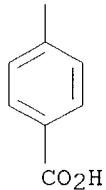
CM 1

CRN 337371-98-9  
CMF C52 H50 04

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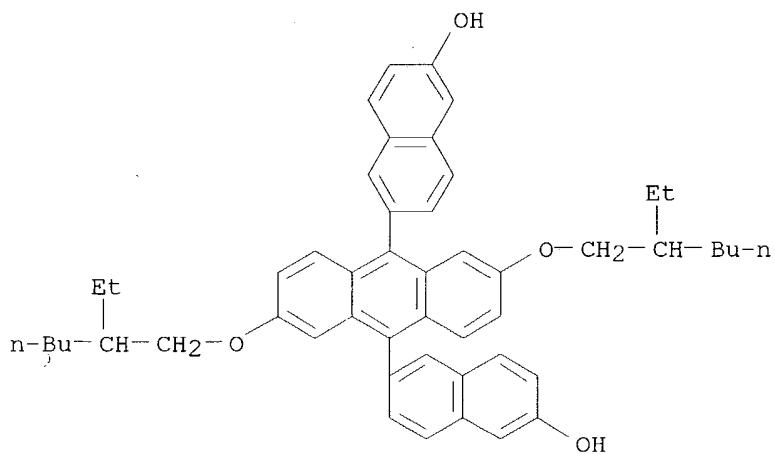


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CM 2

CRN 337369-35-4  
CMF C50 H54 O4



RN 337372-02-8 HCA

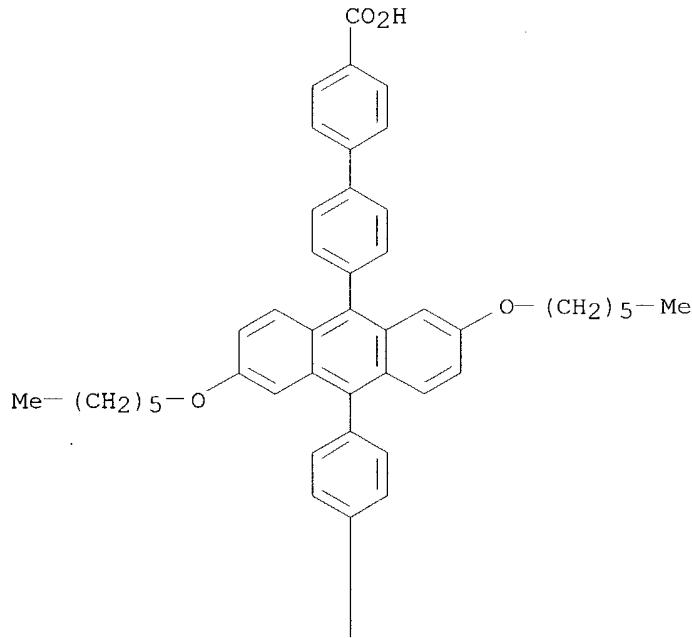
CN [1,1'-Biphenyl]-4-carboxylic acid, 4',4'''-[2,6-bis(hexyloxy)-9,10-anthracenediyl]bis-, polymer with 6-[2,6-dihexyl-10-[8-(hexyloxy)-6-hydroxy-2-naphthalenyl]-9-anthracenyl]-3-(hexyloxy)-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

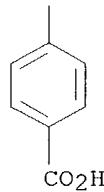
CRN 337372-01-7

CMF C52 H50 O6

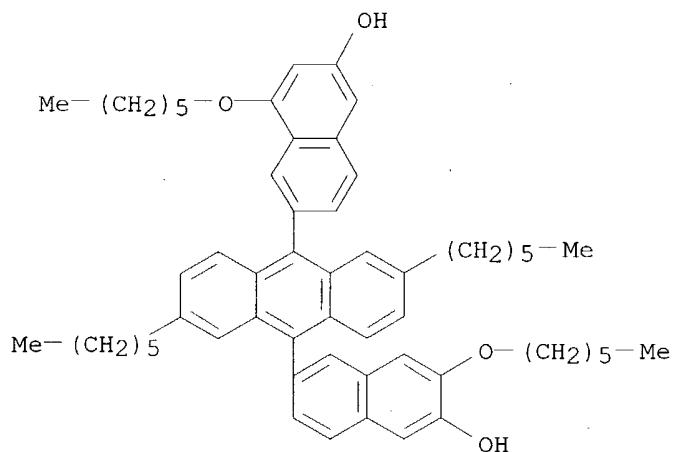
PAGE 1-A



PAGE 2-A

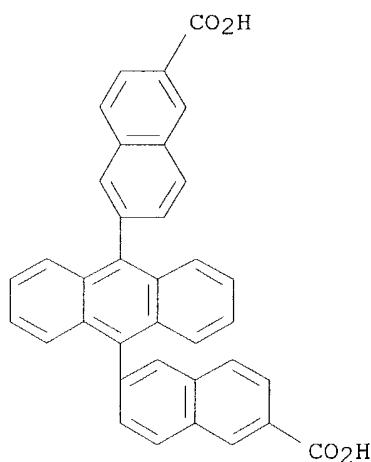


CM 2

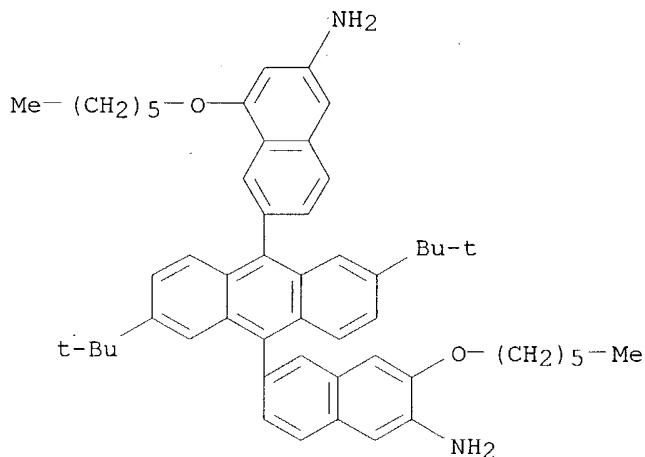
CRN 337370-71-5  
CMF C58 H70 O4RN 337372-05-1 HCA  
CN 2-Naphthalenecarboxylic acid, 6,6'-(9,10-anthracenediyl)bis-, polymer with  
6-[10-[6-amino-8-(hexyloxy)-2-naphthalenyl]-2,6-bis(1,1-dimethylethyl)-9-  
anthracenyl]-3-(hexyloxy)-2-naphthalenamine (9CI) (CA INDEX NAME)

CM 1

CRN 337372-04-0  
CMF C36 H22 O4

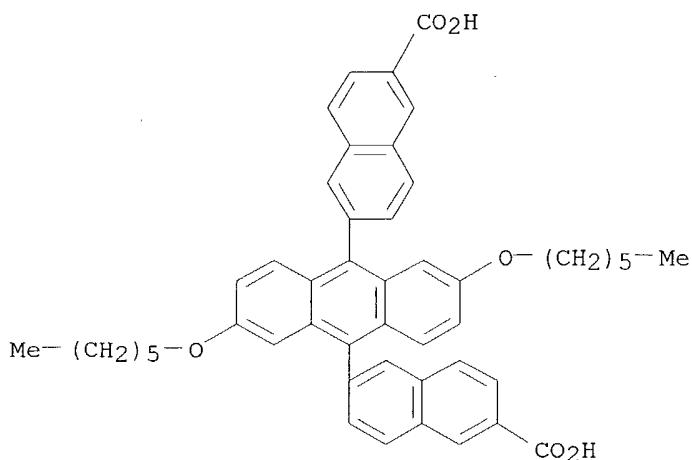


CM 2

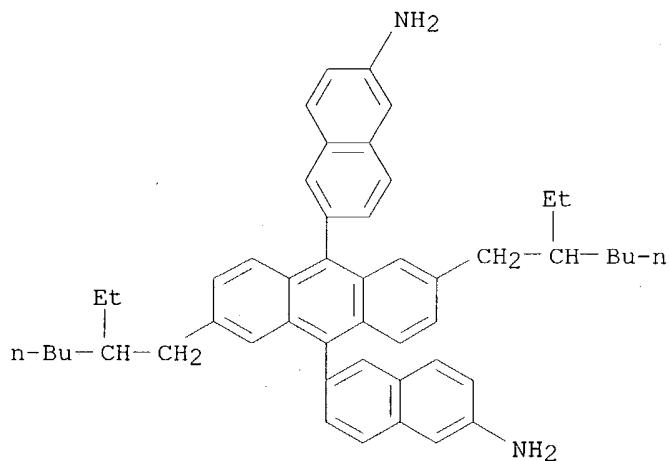
CRN 337371-65-0  
CMF C54 H64 N2 O2RN 337372-09-5 HCA  
CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis(hexyloxy)-9,10-anthracenediyl]bis-, polymer with 6,6'-[2,6-bis(2-ethylhexyl)-9,10-anthracenediyl]bis[2-naphthalenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 337372-08-4  
CMF C48 H46 O6



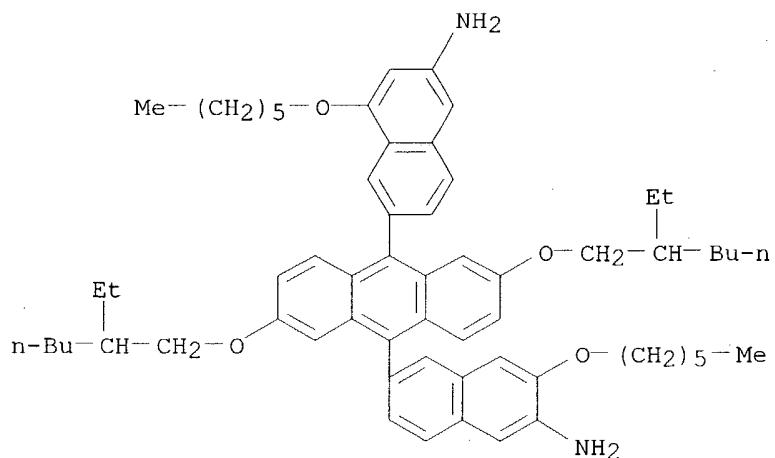
CM 2

CRN 337372-07-3  
CMF C50 H56 N2

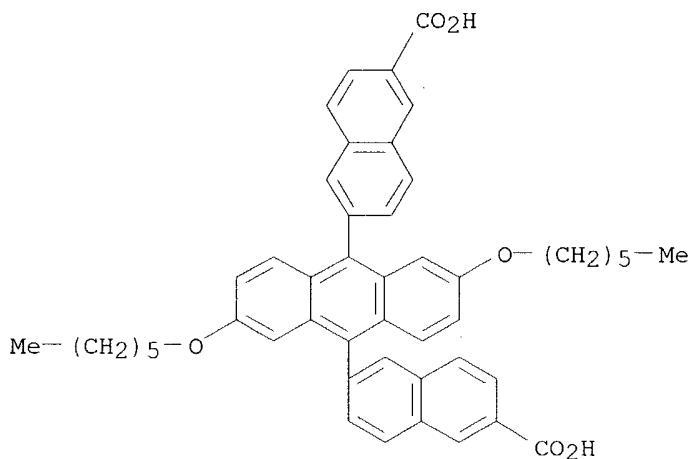
RN 337372-12-0 HCA  
 CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis(hexyloxy)-9,10-anthracenediyl]bis-, polymer with 6-[10-[6-amino-8-(hexyloxy)-2-naphthalenyl]-2,6-bis[(2-ethylhexyl)oxy]-9-anthracenyl]-3-(hexyloxy)-2-naphthalenamine (9CI) (CA INDEX NAME)

CM 1

CRN 337372-11-9  
CMF C62 H80 N2 O4



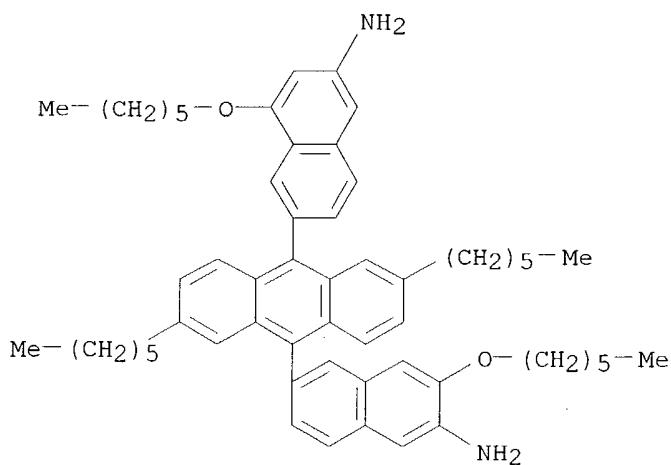
CM 2

CRN 337372-08-4  
CMF C48 H46 O6

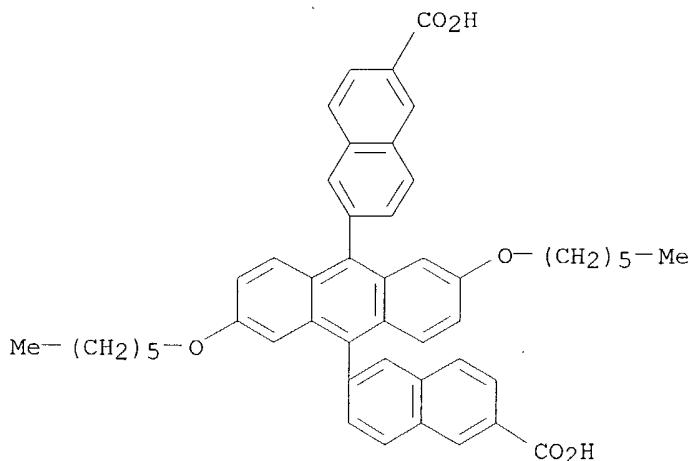
RN 337372-15-3 HCA  
 CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis(hexyloxy)-9,10-anthracenediyl]bis-, polymer with 6-[10-[6-amino-8-(hexyloxy)-2-naphthalenyl]-2,6-dihexyl-9-anthracyl]-3-(hexyloxy)-2-naphthalenamine (9CI) (CA INDEX NAME)

CM 1

CRN 337372-14-2  
CMF C58 H72 N2 O2

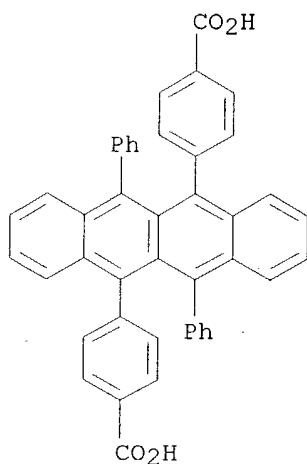


CM 2

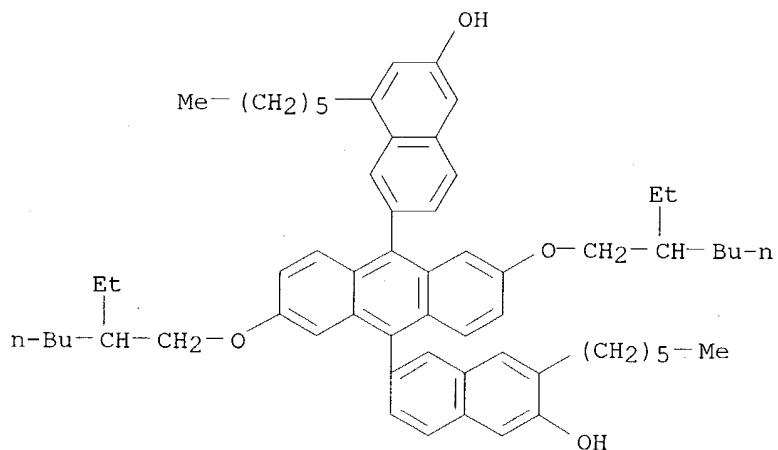
CRN 337372-08-4  
CMF C48 H46 O6RN 337372-19-7 HCA  
CN Benzoic acid, 4,4'-(6,12-diphenyl-5,11-naphthacenediyl)bis-, polymer with 6-[2,6-bis[(2-ethylhexyl)oxy]-10-(8-hexyl-6-hydroxy-2-naphthalenyl)-9-anthracenyl]-3-hexyl-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

CRN 337372-18-6  
CMF C44 H28 O4

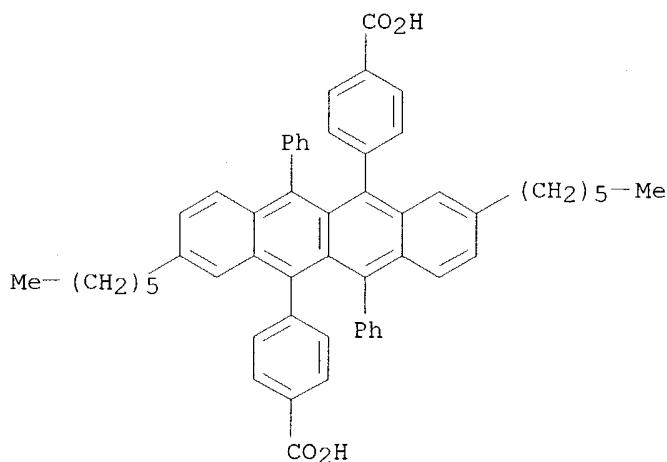


CM 2

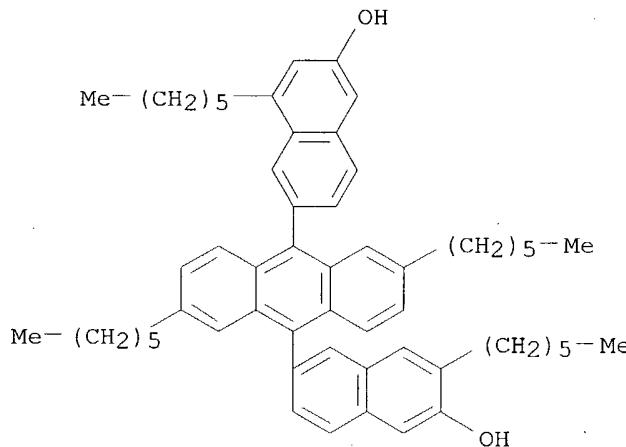
CRN 337372-17-5  
CMF C62 H78 O4RN 337372-22-2 HCA  
CN Benzoic acid, 4,4'-(3,9-dihexyl-6,12-diphenyl-5,11-naphthacenediyl)bis-,  
polymer with 6-[2,6-dihexyl-10-(8-hexyl-6-hydroxy-2-naphthalenyl)-9-  
anthracenyl]-3-hexyl-2-naphthalenol (9CI) (CA INDEX NAME)

CM 1

CRN 337372-21-1  
CMF C56 H52 O4



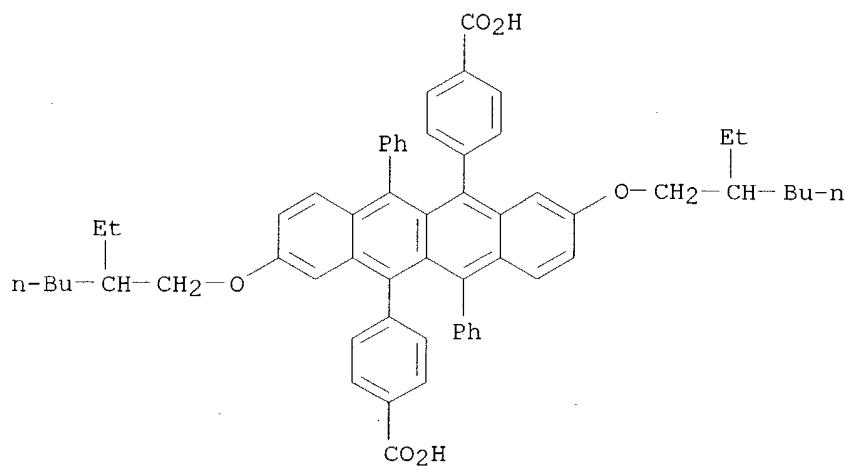
CM 2

CRN 337370-77-1  
CMF C58 H70 O2

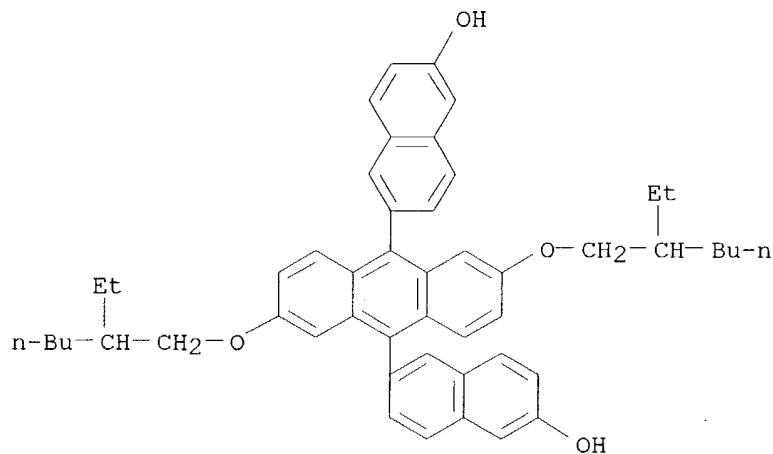
RN 337372-25-5 HCA  
 CN Benzoic acid, 4,4'-[3,9-bis[(2-ethylhexyl)oxy]-6,12-diphenyl-5,11-naphthacenediyl]bis-, polymer with 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis[2-naphthalenol] (9CI) (CA INDEX NAME)

CM 1

CRN 337372-24-4  
CMF C60 H60 O6

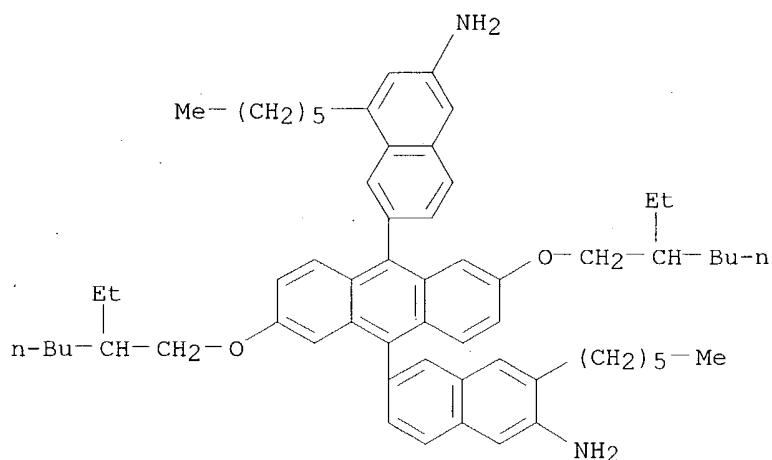


CM 2

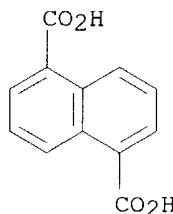
CRN 337369-35-4  
CMF C50 H54 O4RN 337372-28-8 HCA  
CN 1,5-Naphthalenedicarboxylic acid, polymer with 6-[10-(6-amino-8-hexyl-2-naphthalenyl)-2,6-bis[(2-ethylhexyl)oxy]-9-anthracenyl]-3-hexyl-2-naphthalenamine (9CI) (CA INDEX NAME)

CM 1

CRN 337372-27-7  
CMF C62 H80 N2 O2

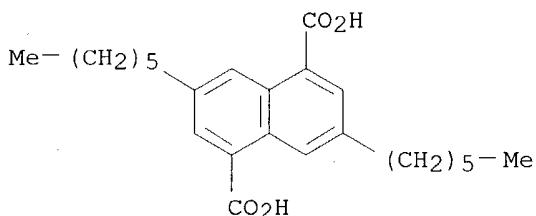


CM 2

CRN 7315-96-0  
CMF C12 H8 O4

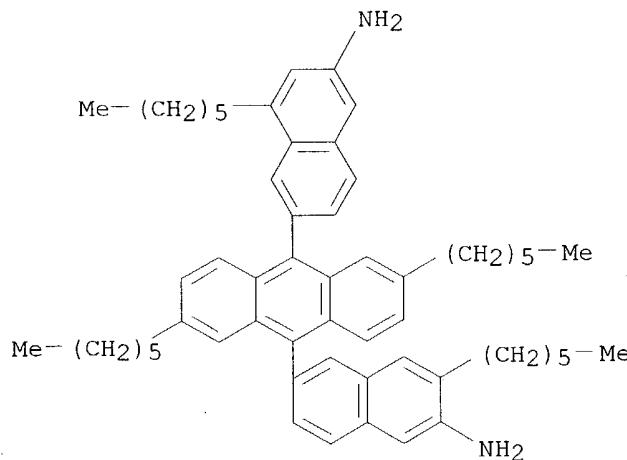
RN 337372-32-4 HCA  
 CN 1,5-Naphthalenedicarboxylic acid, 3,7-dihexyl-, polymer with  
 6-[10-(6-amino-8-hexyl-2-naphthalenyl)-2,6-dihexyl-9-anthracenyl]-3-hexyl-  
 2-naphthalenamine (9CI) (CA INDEX NAME)

CM 1

CRN 337372-31-3  
CMF C24 H32 O4

CM 2

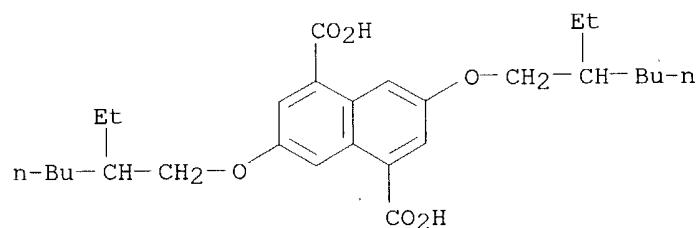
CRN 337372-30-2  
 CMF C58 H72 N2



RN 337372-35-7 HCA  
 CN 1,5-Naphthalenedicarboxylic acid, 3,7-bis[(ethylhexyl)oxy]-, polymer with  
 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis[2-  
 naphthalenamine] (9CI) (CA INDEX NAME)

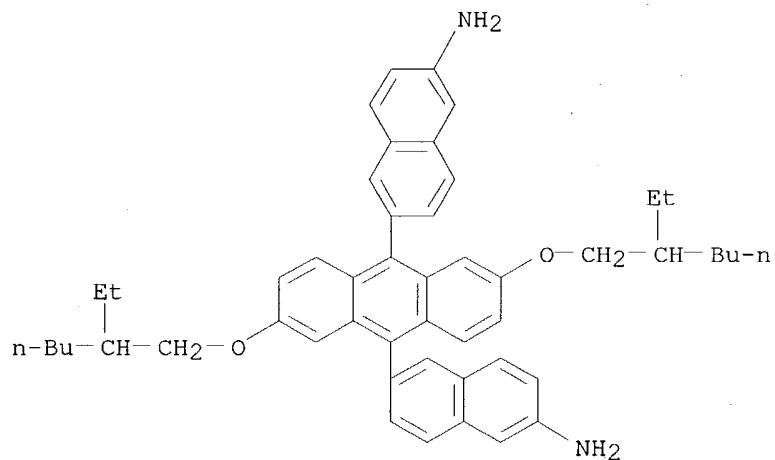
CM 1

CRN 337372-34-6  
 CMF C28 H40 O6



CM 2

CRN 337371-57-0  
 CMF C50 H56 N2 O2



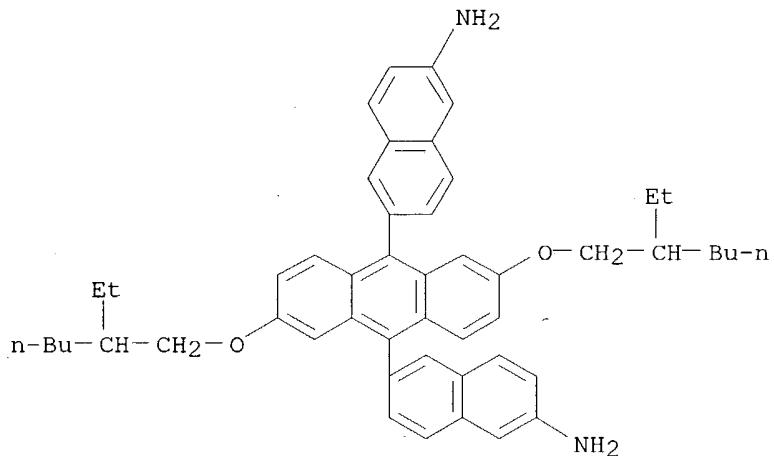
RN 337372-37-9 HCA

CN 1,5-Naphthalenedicarboxylic acid, polymer with 6,6'-(2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl)bis[2-naphthalenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 337371-57-0

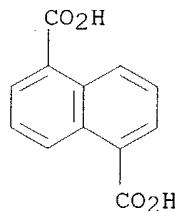
CMF C50 H56 N2 O2



CM 2

CRN 7315-96-0

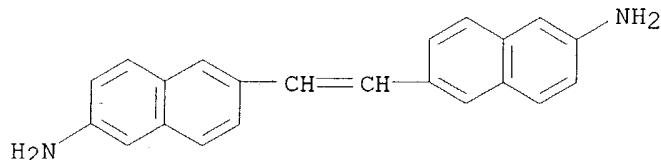
CMF C12 H8 O4



RN 337372-40-4 HCA  
 CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with 6,6'-(1,2-ethenediyl)bis[2-naphthalenamine] (9CI) (CA INDEX NAME)

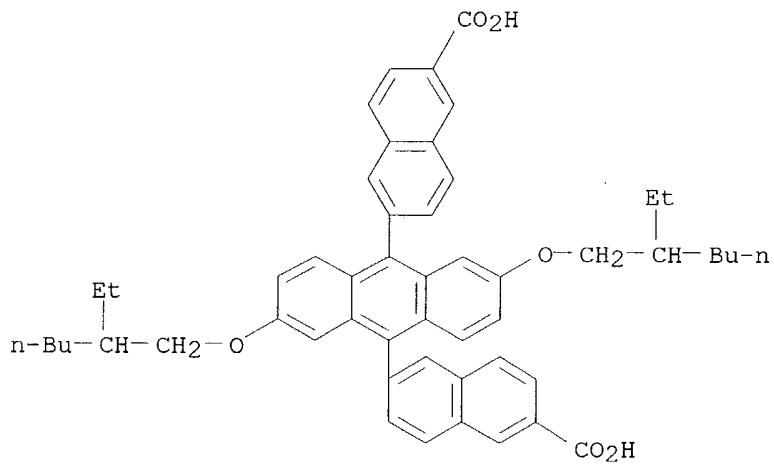
CM 1

CRN 337372-39-1  
 CMF C22 H18 N2



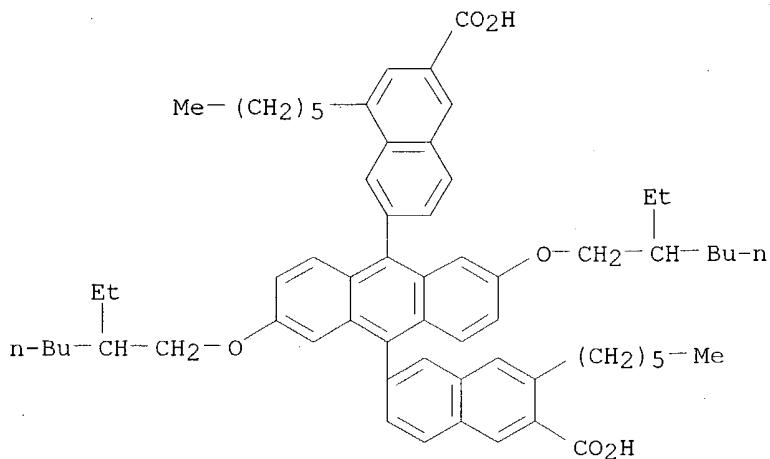
CM 2

CRN 337371-31-0  
 CMF C52 H54 O6

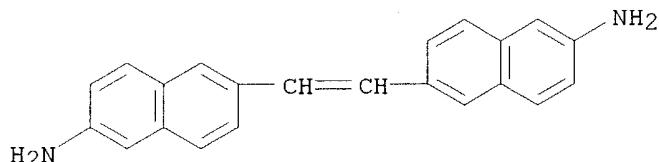


RN 337372-43-7 HCA  
 CN 2-Naphthalenecarboxylic acid, 6-[10-(6-carboxy-8-hexyl-2-naphthalenyl)-2,6-bis[(2-ethylhexyl)oxy]-9-anthracyl]-3-hexyl-, polymer with 6,6'-(1,2-ethenediyl)bis[2-naphthalenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 337372-42-6  
CMF C64 H78 O6

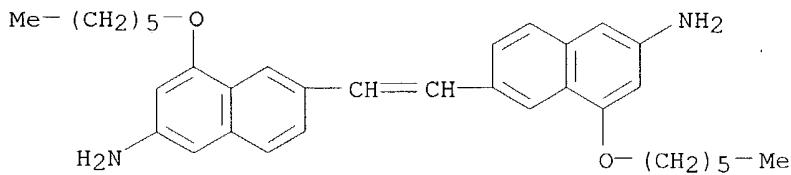
CM 2

CRN 337372-39-1  
CMF C22 H18 N2

RN 337372-47-1 HCA

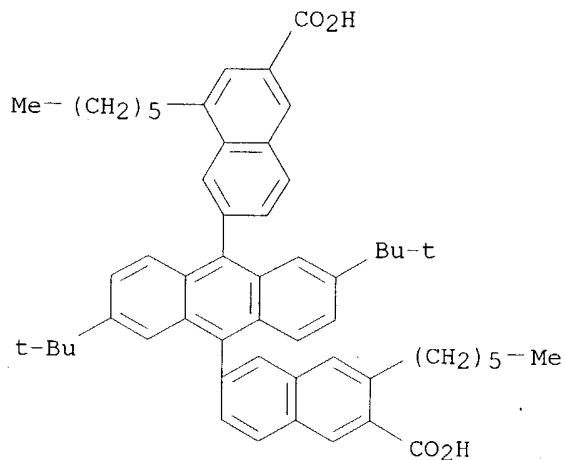
CN 2-Naphthalenecarboxylic acid, 6-[10-(6-carboxy-8-hexyl-2-naphthalenyl)-2,6-bis(1,1-dimethylethyl)-9-anthracenyl]-3-hexyl-, polymer with 6,6'-(1,2-ethenediyl)bis[4-(hexyloxy)-2-naphthalenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 337372-46-0  
CMF C34 H42 N2 O2

CM 2

CRN 337372-45-9  
CMF C56 H62 04

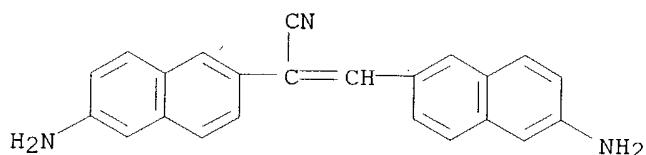


RN 337372-50-6 HCA

CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-antracenediyl]bis-, polymer with 6-amino- $\alpha$ -[(6-amino-2-naphthalenyl)methylene]-2-naphthaleneacetonitrile (9CI) (CA INDEX NAME)

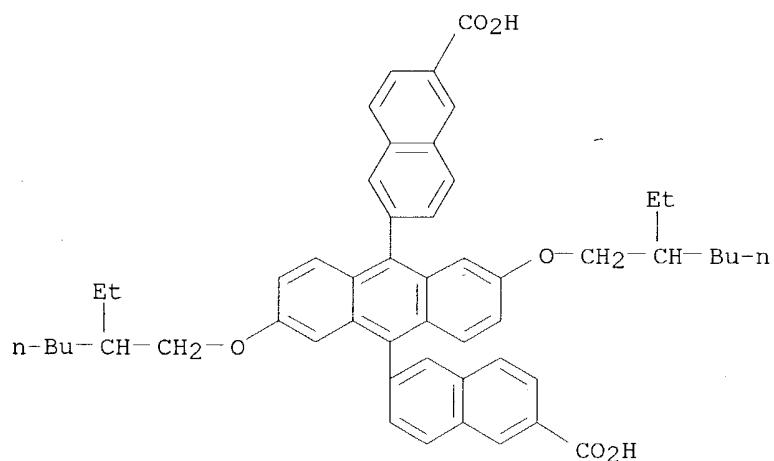
CM 1

CRN 337372-49-3  
CMF C23 H17 N3



CM 2

CRN 337371-31-0  
CMF C52 H54 06



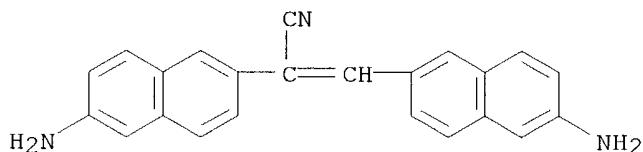
RN 337372-52-8 HCA

CN 2-Naphthalenecarboxylic acid, 6-[10-(6-carboxy-8-hexyl-2-naphthalenyl)-2,6-bis[(2-ethylhexyl)oxy]-9-anthracenyl]-3-hexyl-, polymer with 6-amino-alpha-[(6-amino-2-naphthalenyl)methylene]-2-naphthaleneacetonitrile (9CI) (CA INDEX NAME)

CM 1

CRN 337372-49-3

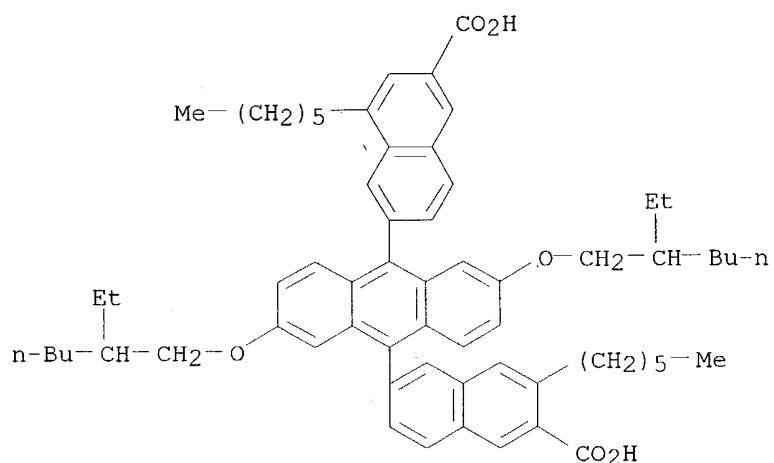
CMF C23 H17 N3



CM 2

CRN 337372-42-6

CMF C64 H78 O6



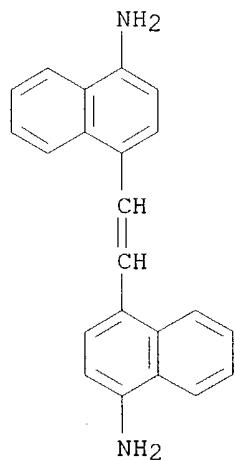
RN 337372-55-1 HCA

CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with 4,4'-(1,2-ethenediyl)bis[1-naphthalenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 337372-54-0

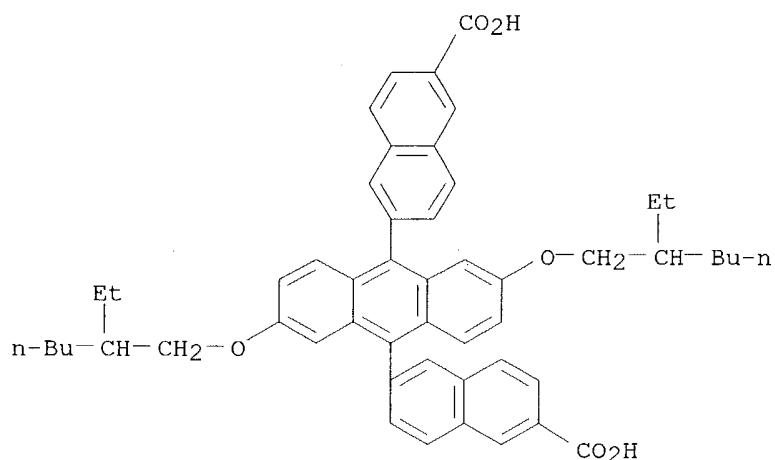
CMF C22 H18 N2



CM 2

CRN 337371-31-0

CMF C52 H54 O6



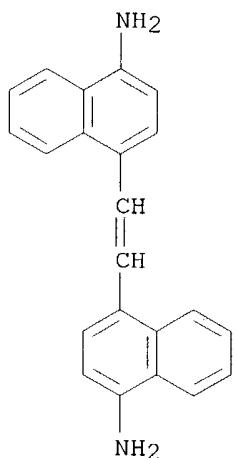
RN 337372-57-3 HCA

CN 2-Naphthalenecarboxylic acid, 6-[10-(6-carboxy-8-hexyl-2-naphthalenyl)-2,6-bis[(2-ethylhexyl)oxy]-3-hexyl-, polymer with 4,4'-(1,2-ethenediyl)bis[1-naphthalenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 337372-54-0

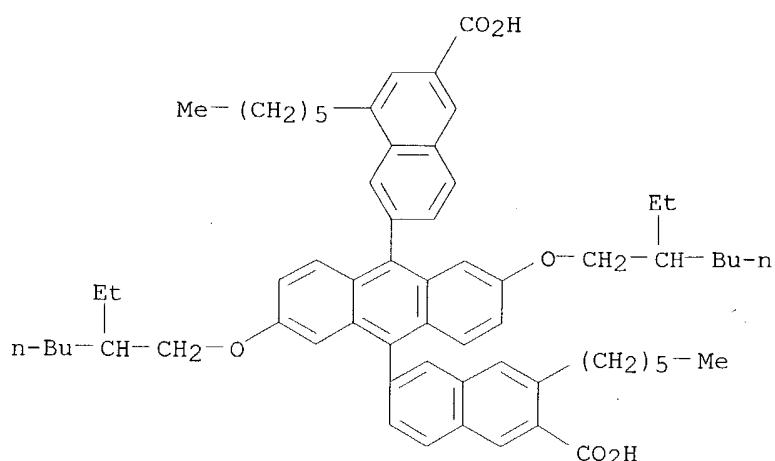
CMF C22 H18 N2



CM 2

CRN 337372-42-6

CMF C64 H78 O6



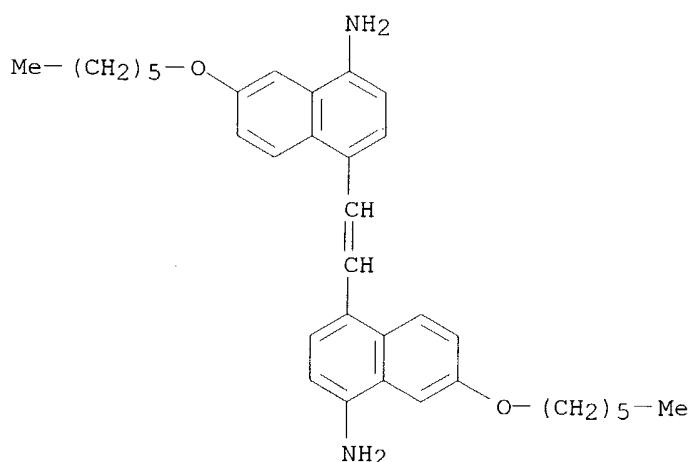
RN 337372-60-8 HCA

CN 2-Naphthalenecarboxylic acid, 6-[10-(6-carboxy-8-hexyl-2-naphthyl)-2,6-bis(1,1-dimethylethyl)-9-anthracyl]-3-hexyl-, polymer with 4,4'-(1,2-ethenediyl)bis[7-(hexyloxy)-1-naphthalenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 337372-59-5

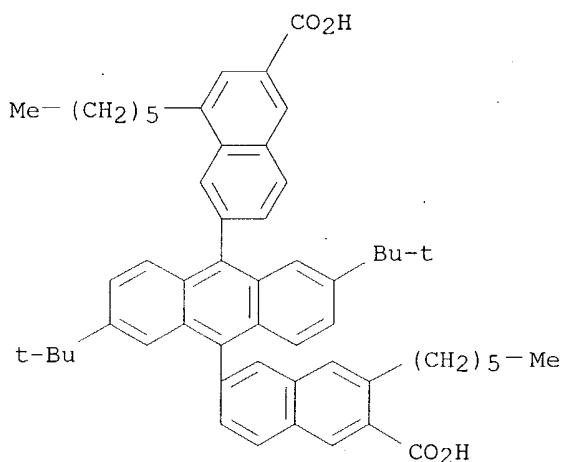
CMF C34 H42 N2 O2



CM 2

CRN 337372-45-9

CMF C56 H62 O4



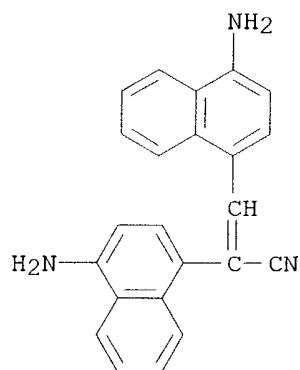
RN 337372-63-1 HCA

CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with 4-amino- $\alpha$ -[(4-amino-1-naphthalenyl)methylene]-1-naphthaleneacetonitrile (9CI) (CA INDEX NAME)

CM 1

CRN 337372-62-0

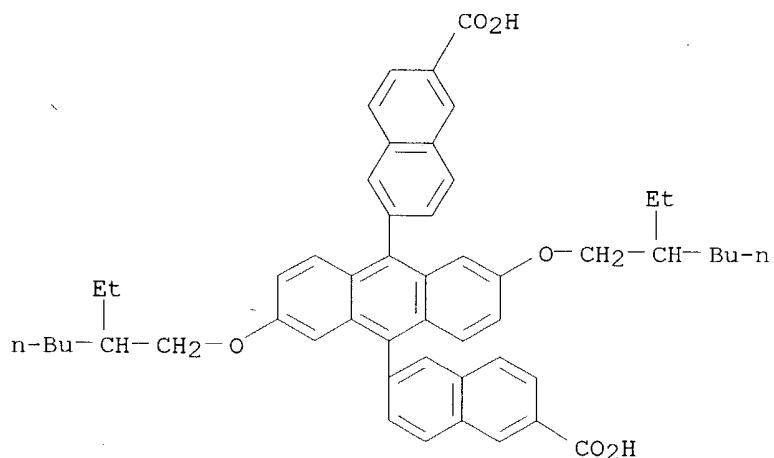
CMF C23 H17 N3



CM 2

CRN 337371-31-0

CMF C52 H54 O6



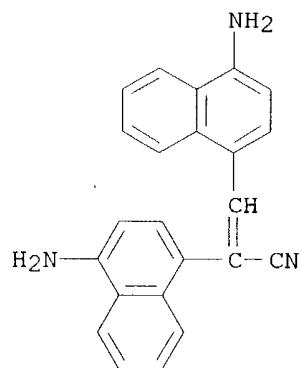
RN 337372-65-3 HCA

CN 2-Naphthalenecarboxylic acid, 6-[10-(6-carboxy-8-hexyl-2-naphthalenyl)-2,6-bis[(2-ethylhexyl)oxy]-9-anthracenyl]-3-hexyl-, polymer with 4-amino-alpha-[(4-amino-1-naphthalenyl)methylene]-1-naphthaleneacetonitrile (9CI) (CA INDEX NAME)

CM 1

CRN 337372-62-0

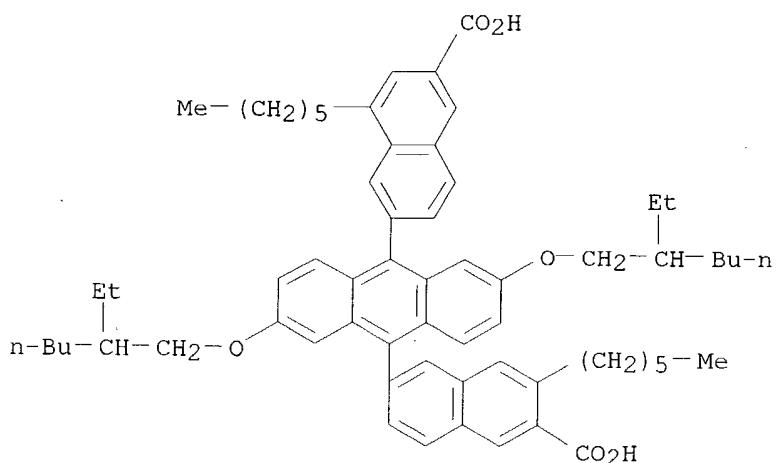
CMF C23 H17 N3



CM 2

CRN 337372-42-6

CMF C64 H78 O6



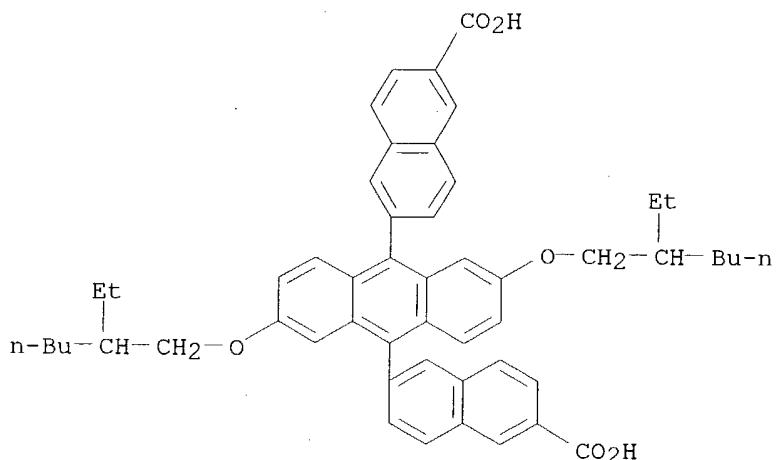
RN 337372-67-5 HCA

CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with 2,5-thiophenediol (9CI) (CA INDEX NAME)

CM 1

CRN 337371-31-0

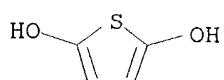
CMF C52 H54 O6



CM 2

CRN 118631-20-2

CMF C4 H4 O2 S



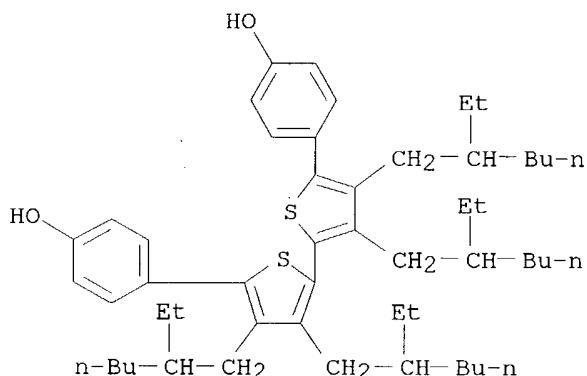
RN 337372-70-0 HCA

CN 2-Naphthalenecarboxylic acid, 6-[10-(6-carboxy-8-hexyl-2-naphthalenyl)-2,6-bis(1,1-dimethylethyl)-9-anthracenyl]-3-hexyl-, polymer with 4,4'-[3,3',4,4'-tetrakis(2-ethylhexyl)[2,2'-bithiophene]-5,5'-diyl]bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 337372-69-7

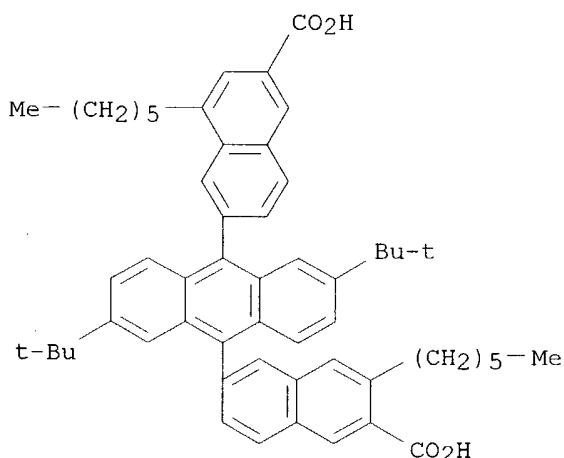
CMF C52 H78 O2 S2



CM 2

CRN 337372-45-9

CMF C56 H62 O4



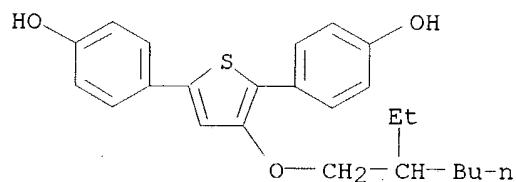
RN 337372-73-3 HCA

CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with 4,4'-[3-[2-ethylhexyl]oxy]-2,5-thiophenediyl]bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 337372-72-2

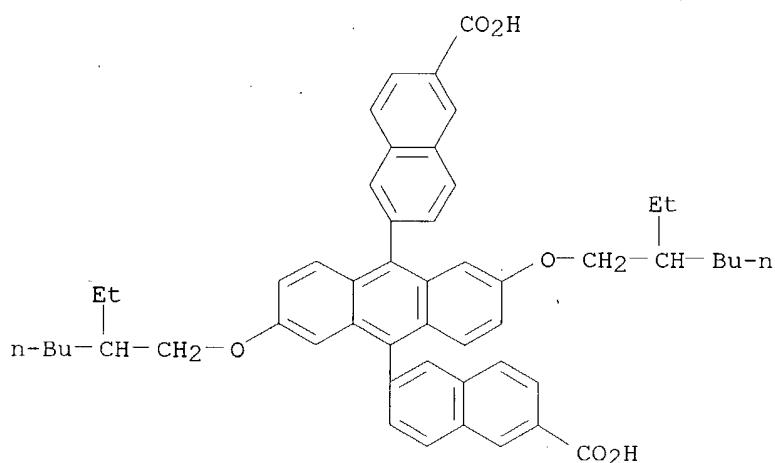
CMF C24 H28 O3 S



CM 2

CRN 337371-31-0

CMF C52 H54 O6



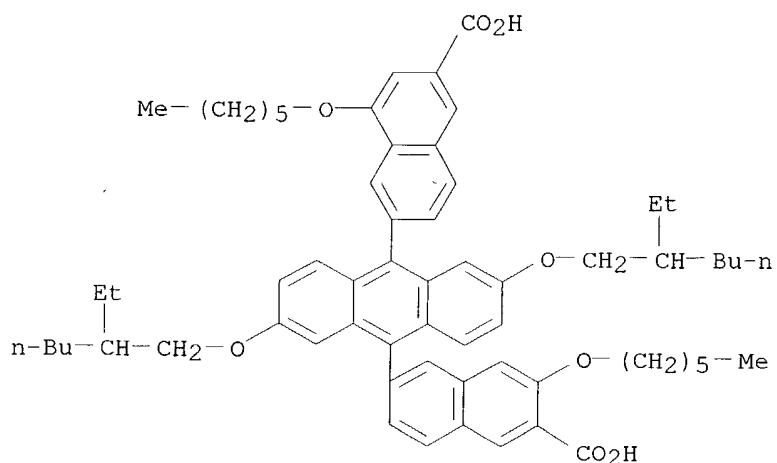
RN 337372-76-6 HCA

CN 2-Naphthalenecarboxylic acid, 6-[10-[6-carboxy-8-(hexyloxy)-2-naphthalenyl]-2,6-bis[(2-ethylhexyl)oxy]-9-anthracenyl]-3-(hexyloxy)-, polymer with 4,4'-[2,2'-bithiophene]-5,5'-diylbis[phenol] (9CI) (CA INDEX NAME)

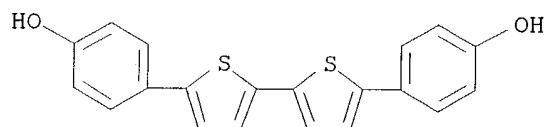
CM 1

CRN 337372-75-5

CMF C64 H78 O8



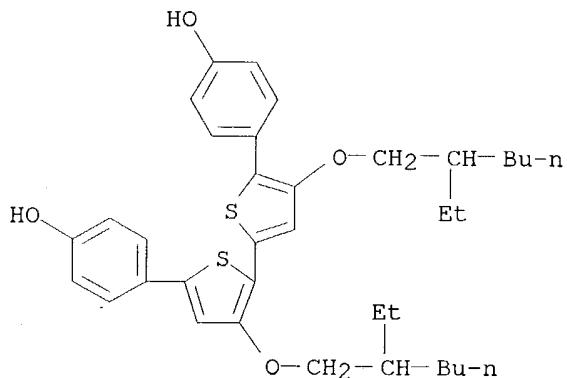
CM 2

CRN 185413-64-3  
CMF C20 H14 O2 S2

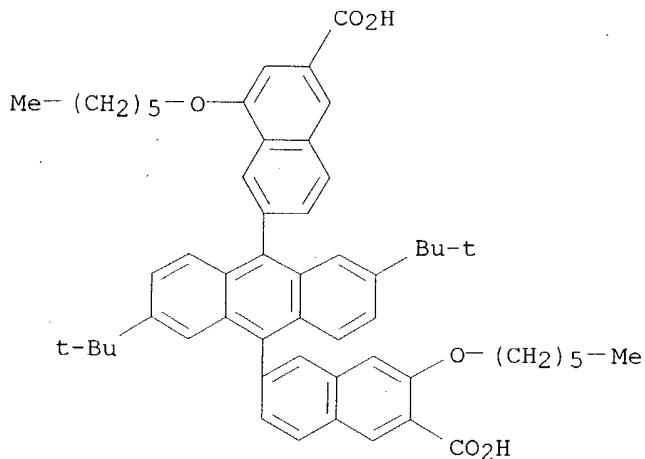
RN 337372-79-9 HCA

CN 2-Naphthalenecarboxylic acid, 6-[10-[6-carboxy-8-(hexyloxy)-2-naphthalenyl]-2,6-bis(1,1-dimethylethyl)-9-anthracenyl]-3-(hexyloxy)-, polymer with 4,4'-[3,4'-bis[(2-ethylhexyl)oxy][2,2'-bithiophene]-5,5'-diyl]bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 337372-78-8  
CMF C36 H46 O4 S2

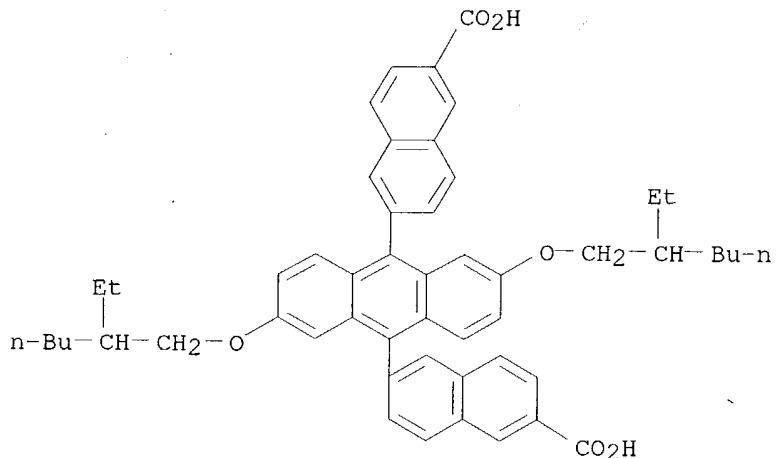
CM 2

CRN 337371-28-5  
CMF C56 H62 O6

RN 337372-81-3 HCA

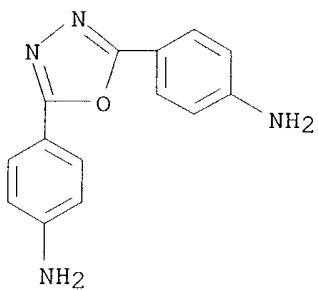
CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with 4,4'-(1,3,4-oxadiazole-2,5-diyl)bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 337371-31-0  
CMF C52 H54 O6

CM 2

CRN 2425-95-8  
CMF C14 H12 N4 O



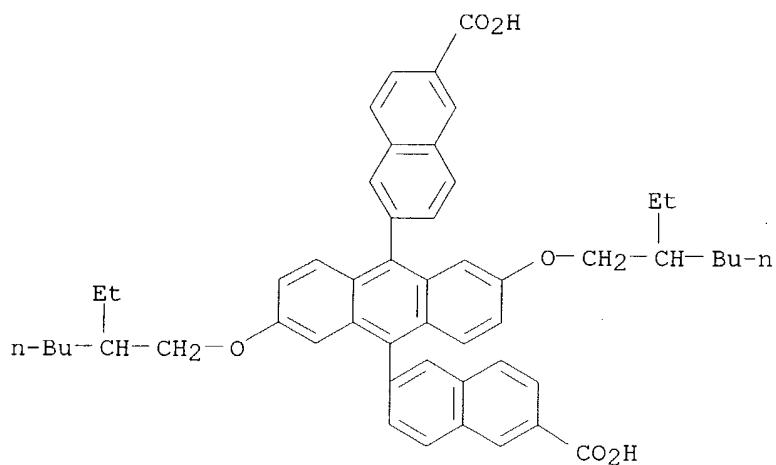
RN 337372-83-5 HCA

CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with 4,4'-(1,3,4-thiadiazole-2,5-diyl)bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 337371-31-0

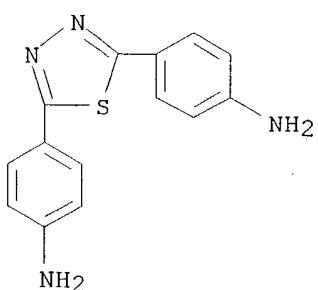
CMF C52 H54 O6



CM 2

CRN 2642-62-8

CMF C14 H12 N4 S



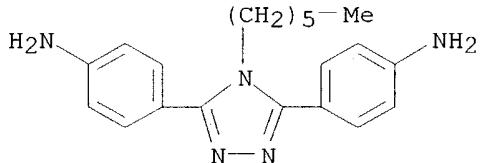
RN 337372-86-8 HCA

CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with 4,4'-(4-hexyl-4H-1,2,4-triazole-3,5-diyl)bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 337372-85-7

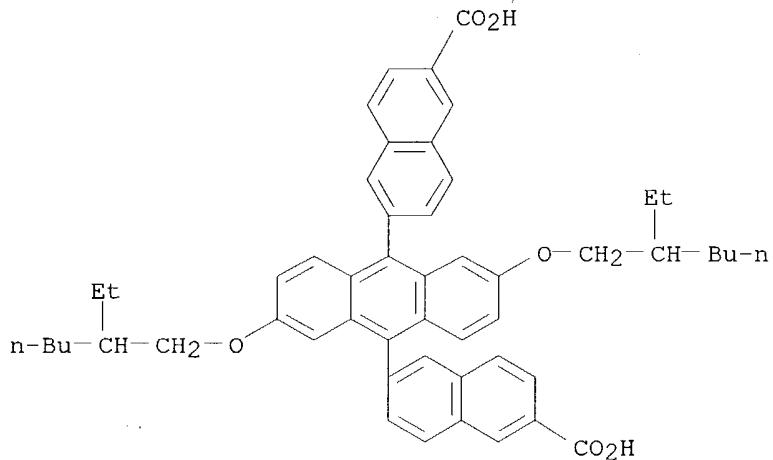
CMF C20 H25 N5



CM 2

CRN 337371-31-0

CMF C52 H54 O6



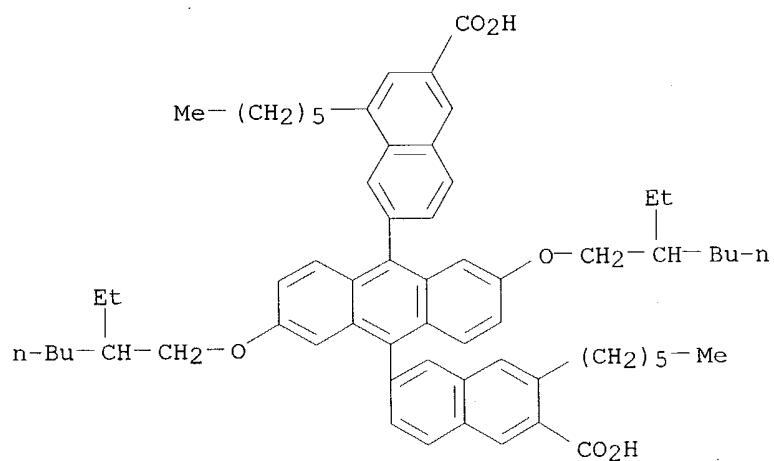
RN 337372-88-0 HCA

CN 2-Naphthalenecarboxylic acid, 6-[10-(6-carboxy-8-hexyl-2-naphthalenyl)-2,6-bis[(2-ethylhexyl)oxy]-9-anthracenyl]-3-hexyl-, polymer with 4',4'''-1,3,4-oxadiazole-2,5-diylbis[[1,1'-biphenyl]-4-amine] (9CI) (CA INDEX NAME)

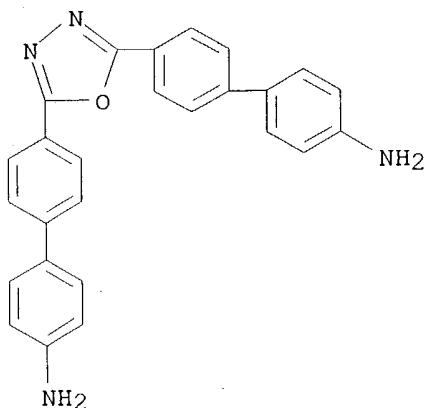
CM 1

CRN 337372-42-6

CMF C64 H78 O6



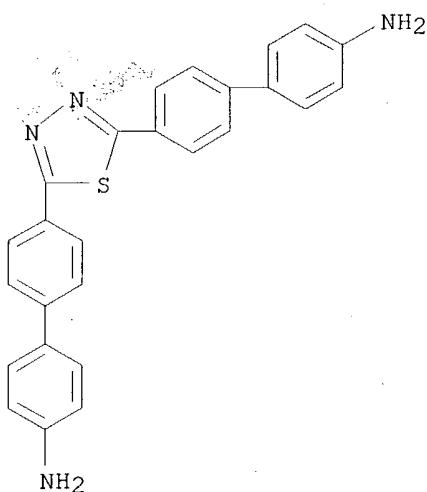
CM 2

CRN 130292-95-4  
CMF C26 H20 N4 O

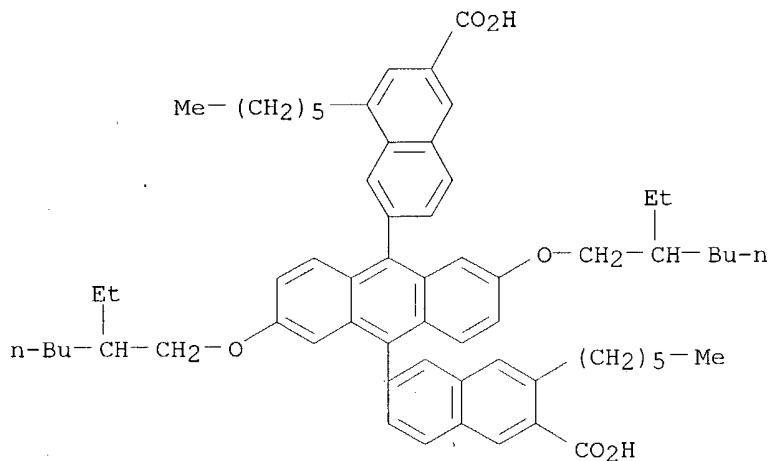
RN 337372-91-5 HCA  
 CN 2-Naphthalenecarboxylic acid, 6-[10-(6-carboxy-8-hexyl-2-naphthyl)-2,6-bis[(2-ethylhexyl)oxy]-3-hexyl] group, polymer with 4,4'-(1,3,4-thiadiazole-2,5-diyl)bis[[1,1'-biphenyl]-4-amine] (9CI) (CA INDEX NAME)

CM 1

CRN 337372-90-4  
CMF C26 H20 N4 S



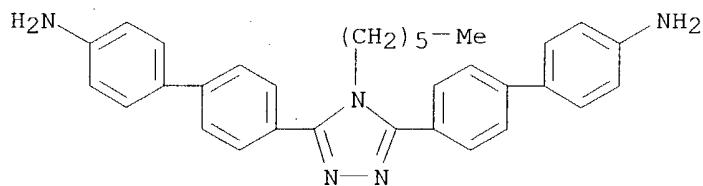
CM 2

CRN 337372-42-6  
CMF C64 H78 O6

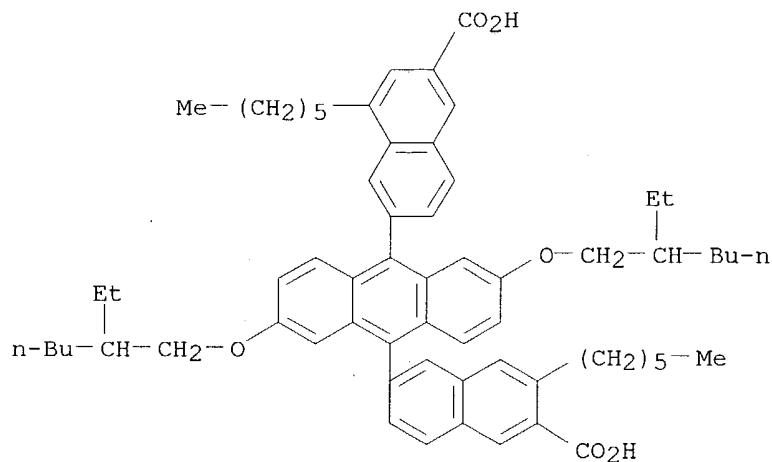
RN 337372-94-8 HCA  
 CN 2-Naphthalenecarboxylic acid, 6-[10-(6-carboxy-8-hexyl-2-naphthalenyl)-2,6-bis[(2-ethylhexyl)oxy]-9-anthracyanoyloxy] group, 4',4''-(4-hexyl-4H-1,2,4-triazole-3,5-diyl)bis[[1,1'-biphenyl]-4-amine]  
 (9CI) (CA INDEX NAME)

CM 1

CRN 337372-93-7  
CMF C32 H33 N5

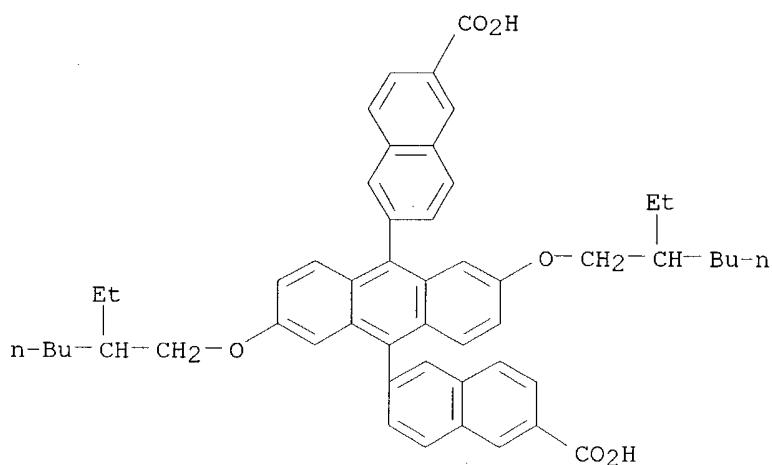


CM 2

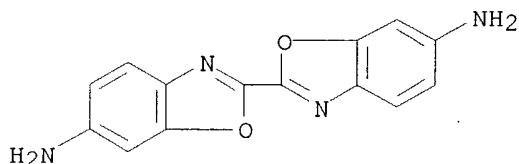
CRN 337372-42-6  
CMF C64 H78 O6RN 337372-96-0 HCA  
CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with [2,2'-bibenzoxazole]-6,6'-diamine (9CI)  
(CA INDEX NAME)

CM 1

CRN 337371-31-0  
CMF C52 H54 O6



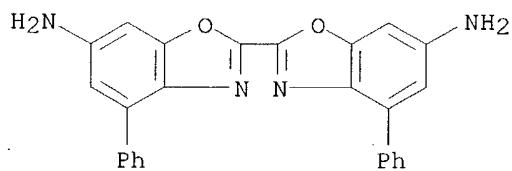
CM 2

CRN 94533-94-5  
CMF C14 H10 N4 O2

RN 337372-99-3 HCA

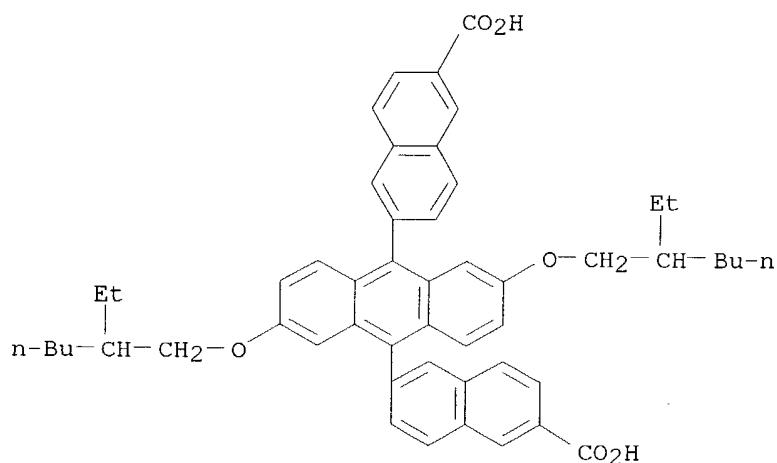
CN 2-Naphthalenecarboxylic acid, 6,6'-(2,6-bis[(2-ethylhexyl)oxy]-9,10-antracenediyl)bis-, polymer with 4,4'-diphenyl[2,2'-bibenzoxazole]-6,6'-diamine (9CI) (CA INDEX NAME)

CM 1

CRN 337372-98-2  
CMF C26 H18 N4 O2

CM 2

CRN 337371-31-0  
CMF C52 H54 O6



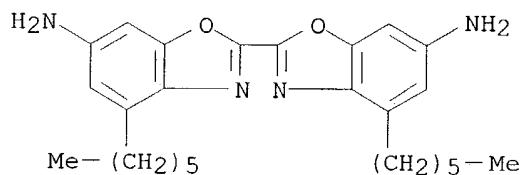
RN 337373-02-1 HCA

CN 2-Naphthalenecarboxylic acid, 6-[10-(6-carboxy-8-hexyl-2-naphthalenyl)-2,6-bis(1,1-dimethylethyl)-9-anthracyl]hexyl-, polymer with 4,4'-dihexyl[2,2'-bibenzoxazole]-6,6'-diamine (9CI) (CA INDEX NAME)

CM 1

CRN 337373-01-0

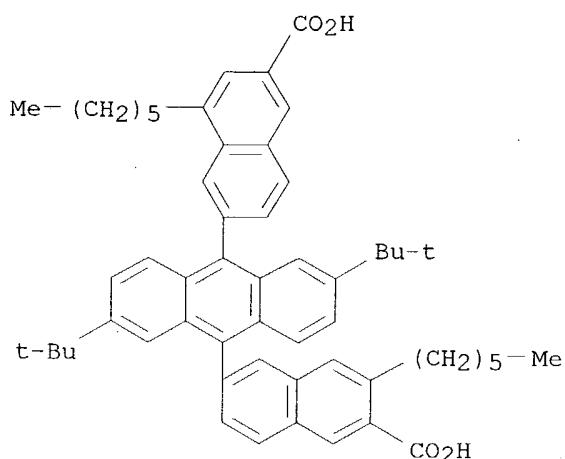
CMF C26 H34 N4 O2



CM 2

CRN 337372-45-9

CMF C56 H62 O4



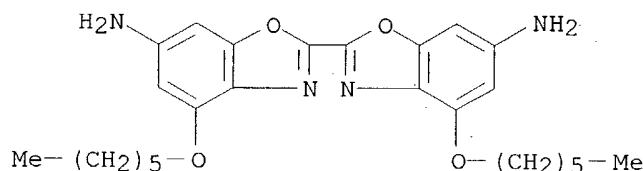
RN 337373-05-4 HCA

CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with 4,4'-bis(hexyloxy)[2,2'-bibenzoxazole]-6,6'-diamine (9CI) (CA INDEX NAME)

CM 1

CRN 337373-04-3

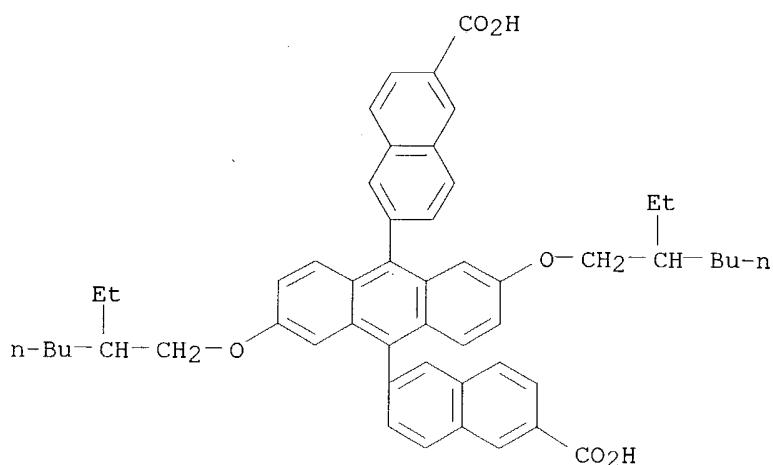
CMF C26 H34 N4 O4



CM 2

CRN 337371-31-0

CMF C52 H54 O6



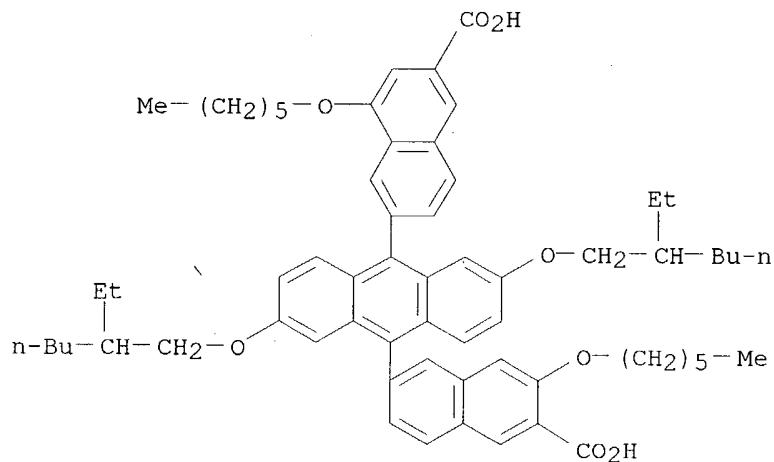
RN 337373-07-6 HCA

CN 2-Naphthalenecarboxylic acid, 6-[10-[6-carboxy-8-(hexyloxy)-2-naphthalenyl]-2,6-bis[(2-ethylhexyl)oxy]-9-anthracenyl]-3-(hexyloxy)-, polymer with [2,2'-bibenzoxazole]-6,6'-diamine (9CT) (CA INDEX NAME)

CM 1

CRN 337372-75-5

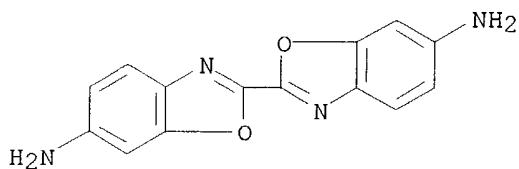
CMF C64 H78 O8



CM 2

CRN 94533-94-5

CMF C14 H10 N4 O2



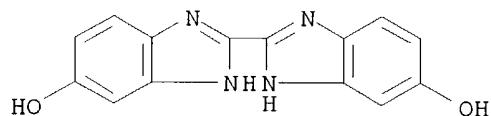
RN 337373-10-1 HCA

CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with [2,2'-bi-1H-benzimidazole]-5,5'-diol (9CI) (CA INDEX NAME)

CM 1

CRN 337373-09-8

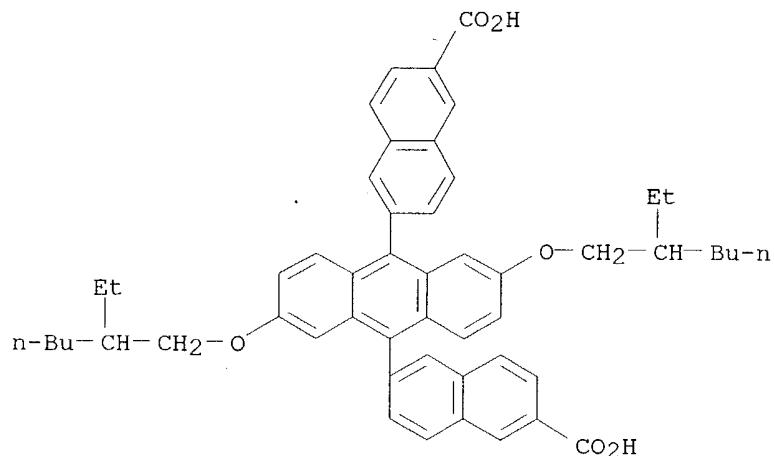
CMF C14 H10 N4 O2



CM 2

CRN 337371-31-0

CMF C52 H54 O6



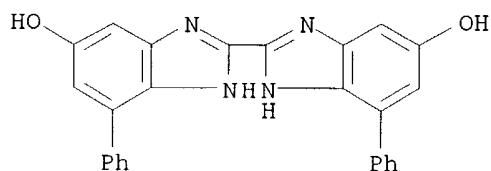
RN 337373-13-4 HCA

CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with 7,7'-diphenyl[2,2'-bi-1H-benzimidazole]-5,5'-diol (9CI) (CA INDEX NAME)

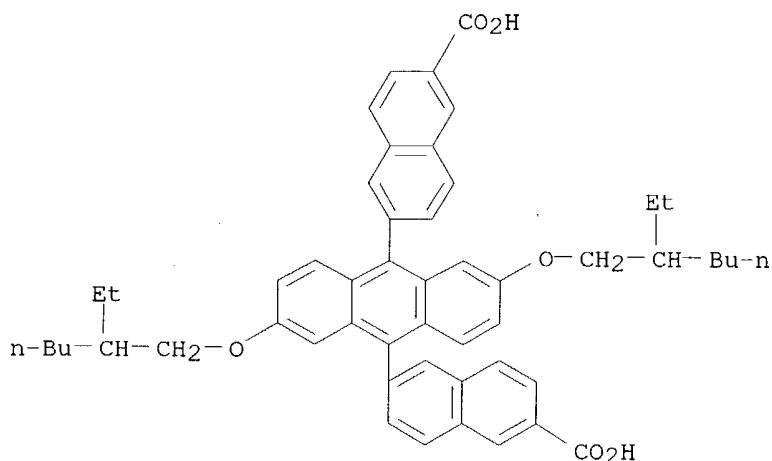
CM 1

CRN 337373-12-3

CMF C26 H18 N4 O2

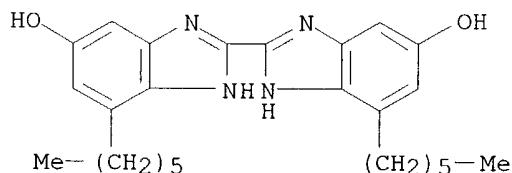


CM 2

CRN 337371-31-0  
CMF C52 H54 O6

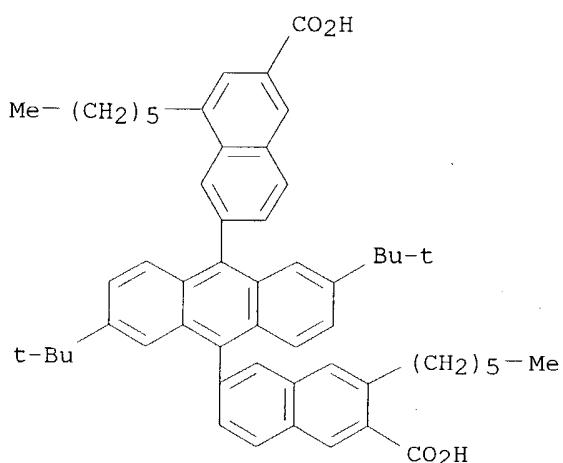
RN 337373-16-7 HCA  
 CN 2-Naphthalenecarboxylic acid, 6-[10-(6-carboxy-8-hexyl-2-naphthalenyl)-2,6-bis(1,1-dimethylethyl)-9-anthracenyl]-3-hexyl-, polymer with 7,7'-dihexyl[2,2'-bi-1H-benzimidazole]-5,5'-diol (9CI) (CA INDEX NAME)

CM 1

CRN 337373-15-6  
CMF C26 H34 N4 O2

CM 2

CRN 337372-45-9  
CMF C56 H62 O4



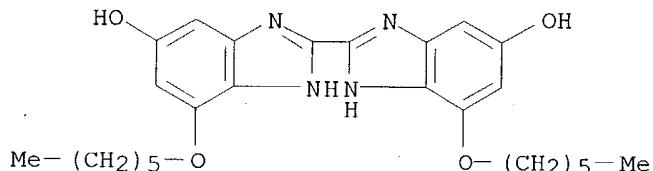
RN 337373-19-0 HCA

CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with 7,7'-bis(hexyloxy)[2,2'-bi-1H-benzimidazol-5,5'-diyl] (9CI) (CA INDEX NAME)

CM 1

CRN 337373-18-9

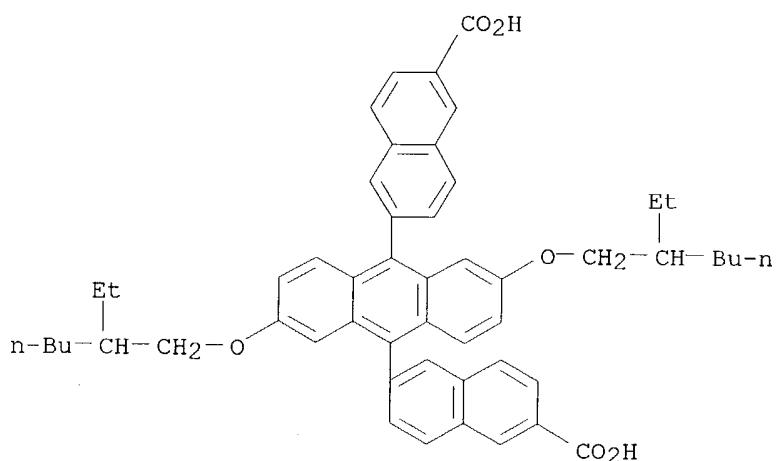
CMF C26 H34 N4 O4



CM 2

CRN 337371-31-0

CMF C52 H54 O6



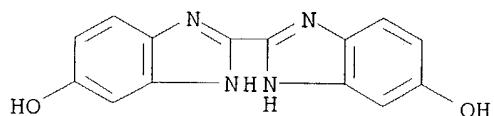
RN 337373-21-4 HCA

CN 2-Naphthalenecarboxylic acid, 6-[10-[6-carboxy-8-(hexyloxy)-2-naphthalenyl]-2,6-bis[(2-ethylhexyl)oxy]-9-anthracyl]-3-(hexyloxy)-, polymer with [2,2'-bi-1H-benzimidazole]-5,5'-diol (9CI) (CA INDEX NAME)

CM 1

CRN 337373-09-8

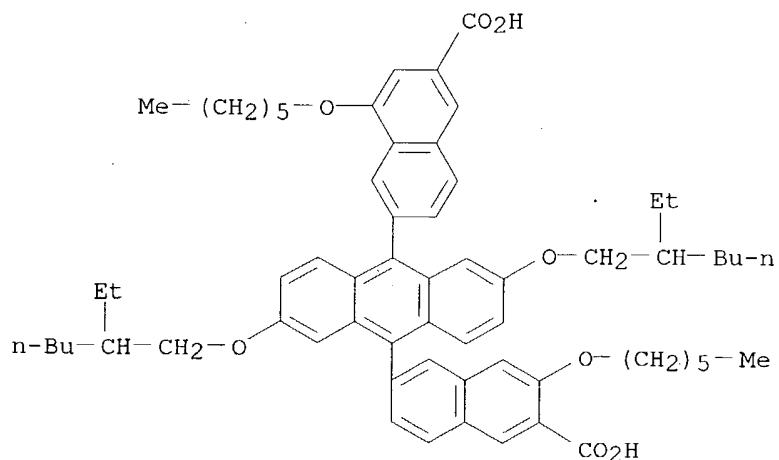
CMF C14 H10 N4 O2



CM 2

CRN 337372-75-5

CMF C64 H78 O8



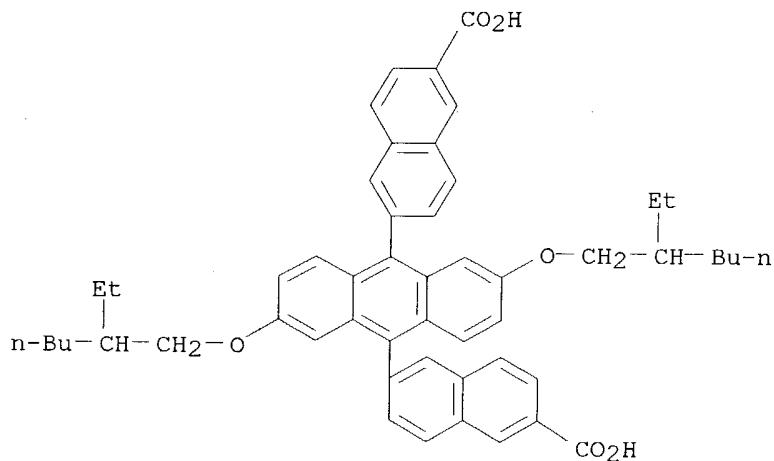
RN 337373-23-6 HCA

CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with 2,2'-(1,4-phenylene)bis[6-quinoxalinamine] (9CI) (CA INDEX NAME)

CM 1

CRN 337371-31-0

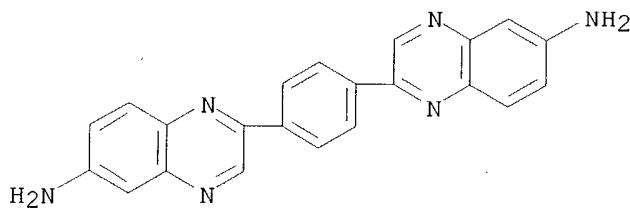
CMF C52 H54 O6



CM 2

CRN 26159-71-7

CMF C22 H16 N6



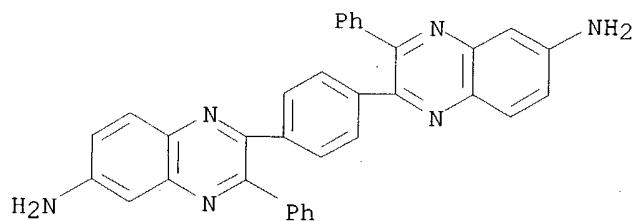
RN 337373-26-9 HCA

CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with 2,2'-(1,4-phenylene)bis[3-phenyl-6-quinoxalinamine] (9CI) (CA INDEX NAME)

CM 1

CRN 337373-25-8

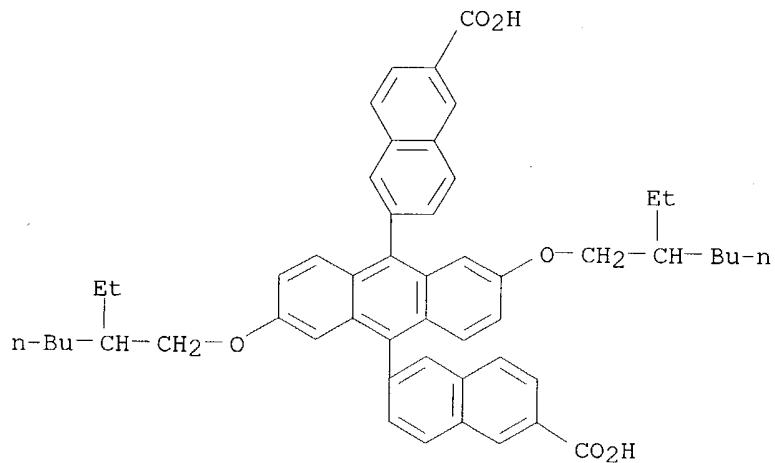
CMF C34 H24 N6



CM 2

CRN 337371-31-0

CMF C52 H54 O6



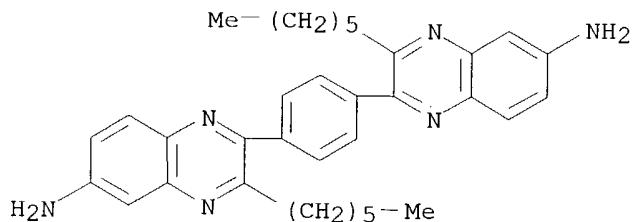
RN 337373-29-2 HCA

CN 2-Naphthalenecarboxylic acid, 6-[10-(6-carboxy-8-hexyl-2-naphthalenyl)-2,6-bis(1,1-dimethylethyl)-9-anthracenyl]-3-hexyl-, polymer with 2,2'-(1,4-phenylene)bis[3-hexyl-6-quinoxalinamine] (9CI) (CA INDEX NAME)

CM 1

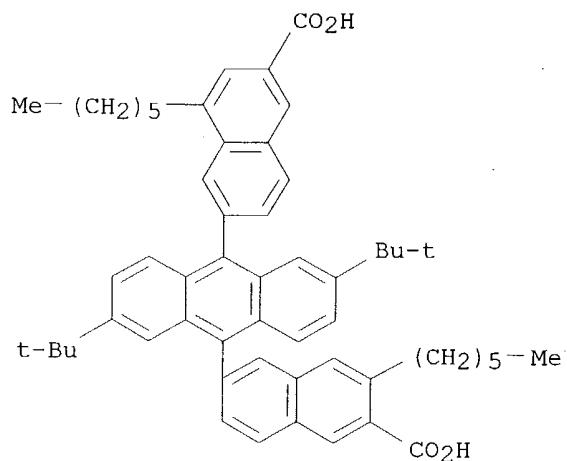
CRN 337373-28-1

CMF C34 H40 N6



CM 2

CRN 337372-45-9  
 CMF C56 H62 O4

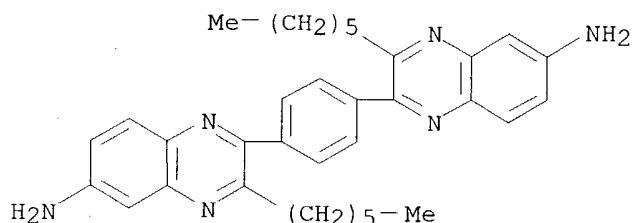


RN 337373-31-6 HCA

CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with 2,2'-(1,4-phenylene)bis[3-hexyl-6-quinoxalinamine] (9CI) (CA INDEX NAME)

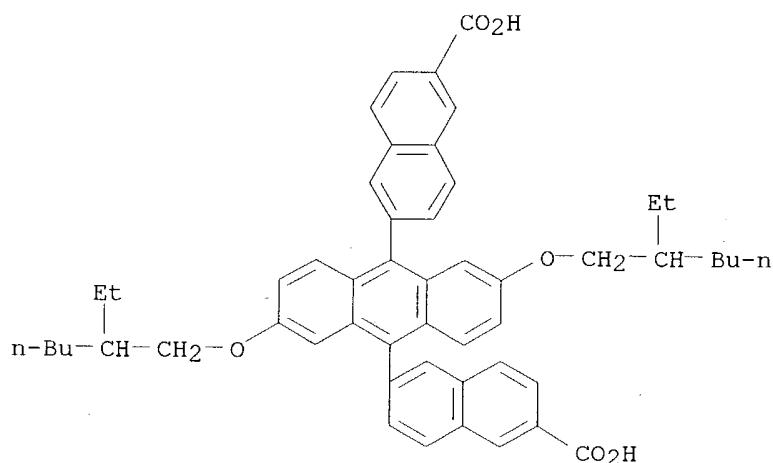
CM 1

CRN 337373-28-1  
 CMF C34 H40 N6



CM 2

CRN 337371-31-0  
 CMF C52 H54 O6



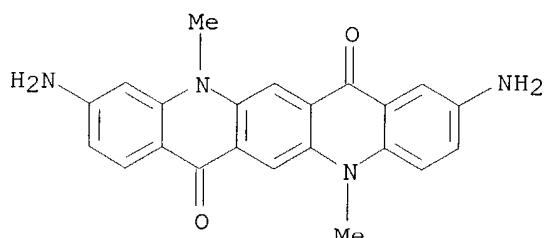
RN 337373-34-9 HCA

CN 2-Naphthalenecarboxylic acid, 6,6'-(2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl)bis-, polymer with 2,10-diamino-5,12-dihydro-5,12-dimethylquino[2,3-b]acridine-7,14-dione (9CI) (CA INDEX NAME)

CM 1

CRN 337373-33-8

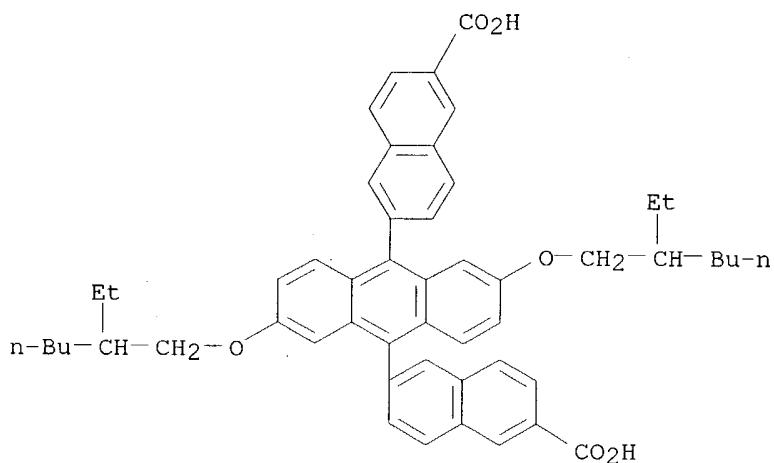
CMF C22 H18 N4 O2



CM 2

CRN 337371-31-0

CMF C52 H54 O6



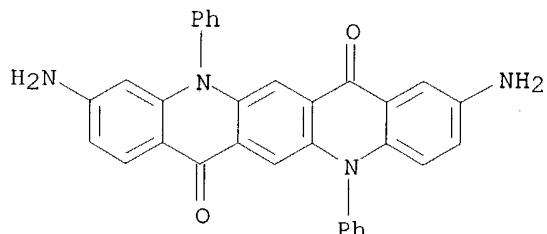
RN 337373-37-2 HCA

CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with 2,10-diamino-5,12-dihydro-5,12-diphenylquino[2,3-b]acridine-7,14-dione (9CI) (CA INDEX NAME)

CM 1

CRN 337373-36-1

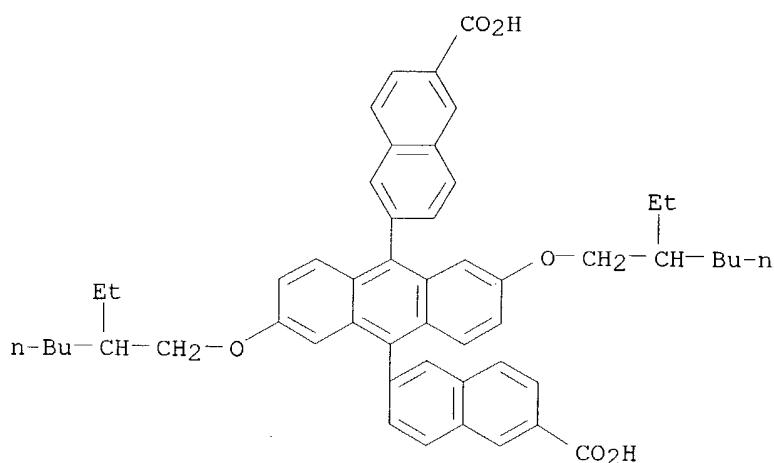
CMF C32 H22 N4 O2



CM 2

CRN 337371-31-0

CMF C52 H54 O6



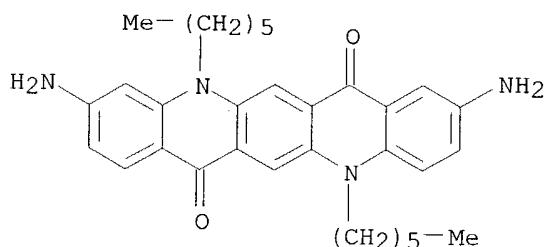
RN 337373-40-7 HCA

CN 2-Naphthalenecarboxylic acid, 6-[10-(6-carboxy-8-hexyl-2-naphthalenyl)-2,6-bis(1,1-dimethylethyl)-3-hexyl]-, polymer with 2,10-diamino-5,12-dihexyl-5,12-dihydroquino[2,3-b]acridine-7,14-dione (9CI) (CA INDEX NAME)

CM 1

CRN 337373-39-4

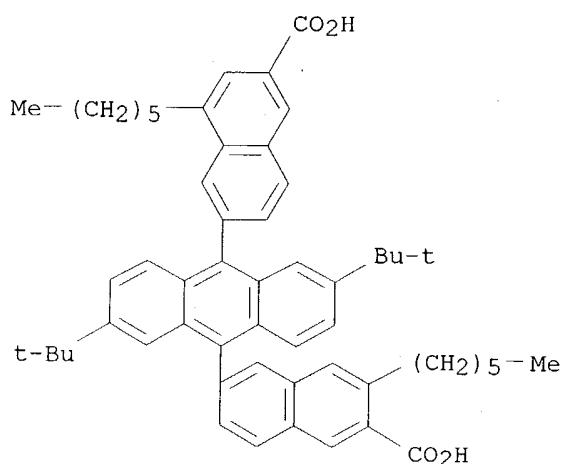
CMF C32 H38 N4 O2



CM 2

CRN 337372-45-9

CMF C56 H62 O4



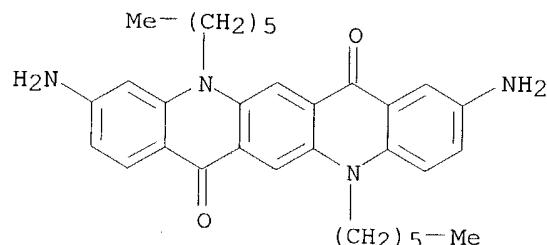
RN 337373-41-8 HCA

CN 2-Naphthalenecarboxylic acid, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with 2,10-diamino-5,12-dihexyl-5,12-dihydroquino[2,3-b]acridine-7,14-dione (9CI) (CA INDEX NAME)

CM 1

CRN 337373-39-4

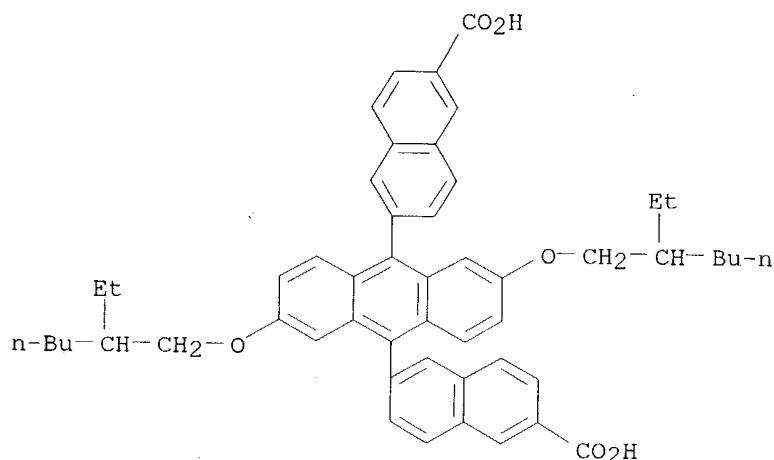
CMF C32 H38 N4 O2



CM 2

CRN 337371-31-0

CMF C52 H54 O6



IT 337369-41-2P 337370-80-6P 337371-21-8P  
 337371-74-1P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (electroluminescent devices using naphthylanthracene-based polymers)

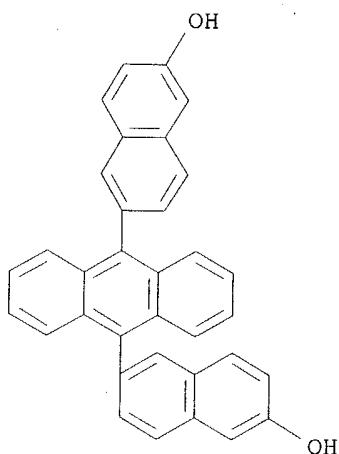
RN 337369-41-2 HCA

CN 1H-Indene-5-carboxylic acid, 3-(4-carboxyphenyl)-2,3-dihydro-1,1,3-trimethyl-, polymer with 6,6'-(9,10-anthracenediyl)bis[2-naphthalenol] (9CI) (CA INDEX NAME)

CM 1

CRN 337369-40-1

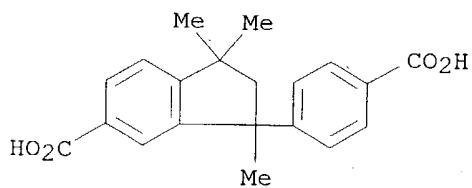
CMF C34 H22 O2



CM 2

CRN 3569-18-4

CMF C20 H20 O4



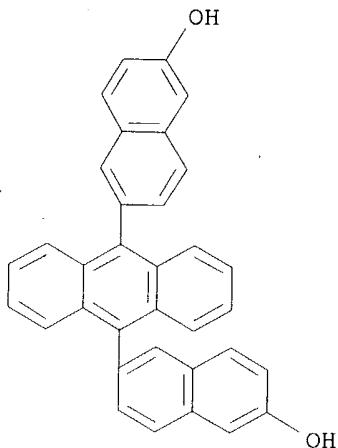
RN 337370-80-6 HCA

CN Tetradeceanedioic acid, polymer with 6,6'-(9,10-anthracenediyl)bis[2-naphthalenol] (9CI) (CA INDEX NAME)

CM 1

CRN 337369-40-1

CMF C34 H22 O2



CM 2

CRN 821-38-5

CMF C14 H26 O4

 $\text{HO}_2\text{C}-(\text{CH}_2)_{12}-\text{CO}_2\text{H}$ 

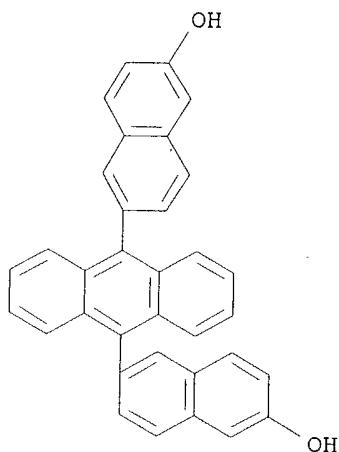
RN 337371-21-8 HCA

CN Benzoic acid, 4,4'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis-, polymer with 6,6'-(9,10-anthracenediyl)bis[2-naphthalenol] (9CI) (CA INDEX NAME)

CM 1

CRN 337369-40-1

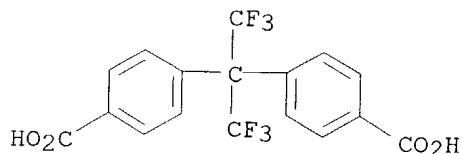
CMF C34 H22 O2



CM 2

CRN 1171-47-7

CMF C17 H10 F6 O4



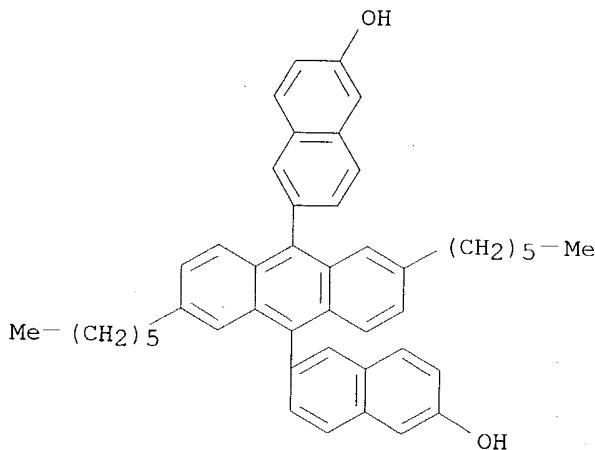
RN 337371-74-1 HCA

CN 1,3-Benzenedicarboxylic acid, 5-(octadecyloxy)-, polymer with  
6,6'-(2,6-diethyl-9,10-anthracenediyl)bis[2-naphthalenol] (9CI) (CA INDEX  
NAME)

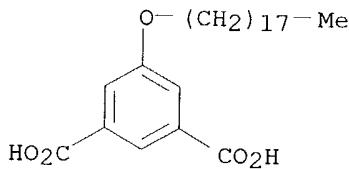
CM 1

CRN 337371-73-0

CMF C46 H46 O2



CM 2

CRN 143294-86-4  
CMF C26 H42 O5

L67 ANSWER 7 OF 10 HCA COPYRIGHT 2004 ACS on STN  
 133:24761 Aromatic polymeric blue-emitting compound and  
**electroluminescent** device and display using it. Kwon, SoonKi;  
 Kim, Yoon Hee; Shin, Dong Chul; Ahn, Joon Hwan; Yoo, Han Sung; Lee, Jung  
 Hyun (Samsung Sdi Co., Ltd., S. Korea). Jpn. Kokai Tokkyo Koho JP  
 2000150162 A2 20000530, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION:  
 JP 1999-108869 19990416. PRIORITY: KR 1998-48402 19981112.

AB The compound comprises  $[(Ar_1CR_1:CR_2Ar_2)kAr_3(Ar_4CR_3:CR_4)m]n$  [I; Ar<sub>1</sub>, Ar<sub>2</sub>, Ar<sub>4</sub> = none, (substituted) Ph, (substituted) aromatic condensed ring; Ar<sub>3</sub> = aromatic condensed ring; R<sub>1-4</sub> = H, ethylenoxy, C<sub>1-20</sub> alkyl, C<sub>1-20</sub> alkoxy, allyl, SiMe<sub>3</sub>, trimethylsilylallyl; k, m = 0, 1; n = 10-200]. The **electroluminescent** device and display device contain I. I shows blue emission with high efficiency.

IC ICM H05B033-14  
 ICS C08G061-00; C08L065-00; C09K011-06; H05B033-22

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 38, 73

ST condensed arom polymer **electroluminescent** device blue emission

IT **Electroluminescent** devices  
 (aromatic blue-emitting polymer for **electroluminescent** device and display)

IT 90-90-4, 4-Bromobenzophenone  
 RL: RCT (Reactant); RACT (Reactant or reagent)

(Wittig reaction of; aromatic blue-emitting polymer for **electroluminescent** device and display)  
IT 271778-90-6P 271779-49-8P  
RL: DEV (Device component use); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (aromatic blue-emitting polymer for **electroluminescent** device and display)

IT 271778-91-7  
RL: RCT (Reactant); RACT (Reactant or reagent) (aromatic blue-emitting polymer for **electroluminescent** device and display)

IT 120-12-7, Anthracene, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent) (bromination of; aromatic blue-emitting polymer for **electroluminescent** device and display)

IT 271779-39-6P  
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (preparation and Wittig reaction with bromobenzophenone; aromatic blue-emitting polymer for **electroluminescent** device and display)

IT 523-27-3P, 9,10-Dibromoanthracene  
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (preparation and polymerization or reaction of; aromatic blue-emitting polymer for **electroluminescent** device and display)

IT 271779-47-6P  
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (preparation and polymerization with dibromoanthracene; aromatic blue-emitting polymer for **electroluminescent** device and display)

IT 54842-92-1P  
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (preparation and polymerization with diphenylbis(bromophenyl)silane; aromatic blue-emitting polymer for **electroluminescent** device and display)

IT 18733-91-0  
RL: RCT (Reactant); RACT (Reactant or reagent) (preparation and polymerization with naphthalene derivative; aromatic blue-emitting polymer for **electroluminescent** device and display)

IT 603-35-0, Triphenylphosphine, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent) (reaction with bromobenzyl bromide; aromatic blue-emitting polymer for **electroluminescent** device and display)

IT 2156-04-9  
RL: RCT (Reactant); RACT (Reactant or reagent) (reaction with dibromoanthracene; aromatic blue-emitting polymer for **electroluminescent** device and display)

IT 80-10-4, Dichlorodiphenylsilane  
RL: RCT (Reactant); RACT (Reactant or reagent) (reaction with dibromobenzene; aromatic blue-emitting polymer for **electroluminescent** device and display)

IT 106-37-6, 1,4-Dibromobenzene

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with phenylchlorosilane; aromatic blue-emitting polymer for  
**electroluminescent** device and display)

IT 589-15-1, 4-Bromobenzyl bromide

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with triphenylphosphine; aromatic blue-emitting polymer for  
**electroluminescent** device and display)

IT 271778-90-6P

RL: DEV (Device component use); SPN (Synthetic preparation); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (aromatic blue-emitting polymer for **electroluminescent** device  
 and display)

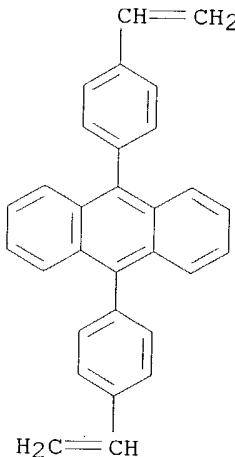
RN 271778-90-6 HCA

CN Silane, bis(4-bromophenyl)diphenyl-, polymer with 9,10-bis(4-  
 ethenylphenyl)anthracene (9CI) (CA INDEX NAME)

CM 1

CRN 54842-92-1

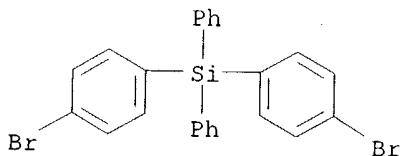
CMF C30 H22



CM 2

CRN 18733-91-0

CMF C24 H18 Br2 Si



L67 ANSWER 8 OF 10 HCA COPYRIGHT 2004 ACS on STN

128:13471 A Novel, Bright Blue **Electroluminescent** Polymer: A  
 Diphenylanthracene Derivative. Kim, Yunhi; Kwon, Sunki; Yoo, Dongsik;  
 Rubner, Michael F.; Wrighton, Mark S. (Departments of Chemistry and

Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, 02139, USA). Chemistry of Materials, 9(12), 2699-2701 (English) 1997. CODEN: CMATEX. ISSN: 0897-4756. Publisher: American Chemical Society.

AB A blue **electroluminescent** polymer containing 9,10-diphenylanthracenevinylenephenylene and alkylene block in the main chain was prepared by the Wittig reaction. The polymer structure was characterized by elemental anal., IR, 1H NMR, and 13C NMR. High photoluminescence quantum yields, up to 0.88 ± 10% in solution and 0.32 ± 10% in the solid state, have been measured for this polymer. **Electroluminescent** devices were made with a single layer of the polymer using ITO as the **anode** and Al as the **cathode**. A bluish white luminescence from this single layered device has been obtained with intensities in the range of 45-80 cd/m<sup>2</sup> and external quantum efficiency of 0.01%.

CC 35-5 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 76

ST blue **electroluminescent** polymer prep device; anthracene vinylene contg polymer **electroluminescent**

IT Luminescence, **electroluminescence**  
(preparation of blue polymer containing diphenylanthracenevinylenephenylene units and use in **electroluminescent** device)

IT Polyethers, preparation  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(preparation of blue polymer containing diphenylanthracenevinylenephenylene units and use in **electroluminescent** device)

IT 7429-90-5, Aluminum, uses 50926-11-9, Ito  
RL: DEV (Device component use); USES (Uses)  
(preparation of blue polymer containing diphenylanthracenevinylenephenylene units and use in **electroluminescent** device)

IT 199121-85-2P 199121-86-3P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(preparation of blue polymer containing diphenylanthracenevinylenephenylene units and use in **electroluminescent** device)

IT 199121-85-2P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(preparation of blue polymer containing diphenylanthracenevinylenephenylene units and use in **electroluminescent** device)

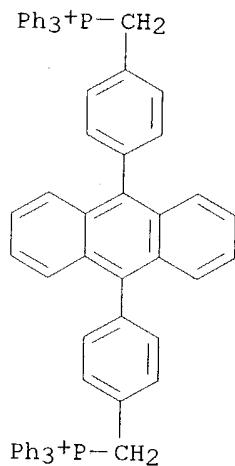
RN 199121-85-2 HCA

CN Phosphonium, [9,10-anthracenediylbis(4,1-phenylenemethylene)]bis[triphenyl-, dibromide, polymer with 4,4'-[1,6-hexanediylobis(oxy)]bis[3-methoxybenzaldehyde] (9CI) (CA INDEX NAME)

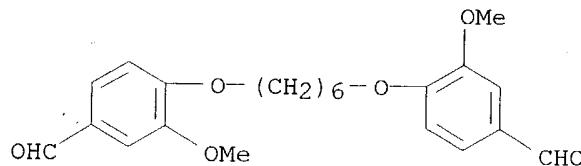
CM 1

CRN 199121-84-1

CMF C64 H50 P2 . 2 Br

● 2 Br<sup>-</sup>

CM 2

CRN 79293-43-9  
CMF C22 H26 O6

L67 ANSWER 9 OF 10 HCA COPYRIGHT 2004 ACS on STN

127:35249 **Electroluminescence** from New Polynorbornenes That Contain  
Blue-Light-Emitting and Charge-Transport Side Chains.

Boyd, Thomas J.; Geerts, Yves; Lee, Jin-Kyu; Fogg, Deryn E.; Lavoie, Gino G.; Schrock, Richard R.; Rubner, Michael F. (Department of Chemistry, Massachusetts Institute of Technology, Cambridge, MA, 02139, USA). *Macromolecules*, 30(12), 3553-3559 (English) 1997. CODEN: MAMOBX. ISSN: 0024-9297. Publisher: American Chemical Society.

AB A blue-light-emitting **electroluminescent** polymer was prepared by ring-opening metathesis polymerization (ROMP) of a norbornene monomer that contains a diphenylanthracene chromophore as a side chain ( $\lambda_{max,em} = 450$  nm). Norbornene monomers also were synthesized that contain an oxadiazole (for electron transport) or a tertiary arylamine (for hole transport). Oligomers (25mers or 50mers) of homo- and copolymers ( $M_w/M_n = 1.02-1.08$ ) were prepared in toluene in 95-98% yield, employing  $Mo(N-2,6-C_6H_3-i-Pr_2)(CHMe_2Ph)(O-t-Bu)_2$  as the initiator. **Electroluminescent** devices made with a single layer of substituted polynorbornene, an ITO **anode**, and an Al **cathode** were prepared first. Two-layer devices were then constructed in which the

substituted polynorbornene was spin cast onto a 25-bilayer poly(phenylenevinylene) (PPV) heterostructure. The two-layer device performed best in terms of efficiency, light output, and threshold voltage.

CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 74, 76

ST **electroluminescent** device side chain polynorbornene; blue emitting side chain polynorbornene prep; oxadiazole norbornene monomer electron transport; aniline norbornene monomer hole transport; diphenylanthracene norbornene monomer ring opening polymn

IT **Electroluminescent** devices  
(blue-emitting; **electroluminescence** from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)

IT Luminescence, **electroluminescence**  
(blue; **electroluminescence** from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)

IT Threshold potential  
(of **electroluminescence** devices based on polynorbornenes containing blue-light-emitting and charge-transport side chains)

IT Polymerization  
(ring-opening, metathesis; **electroluminescence** from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)

IT **Electroluminescent** devices  
(single- and two-layer; **electroluminescence** from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)

IT Poly(arylenealkenylenes)  
RL: DEV (Device component use); USES (Uses)  
(sublayer; **electroluminescence** from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)

IT 50926-11-9, ITO  
RL: DEV (Device component use); USES (Uses)  
(anode; **electroluminescence** from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)

IT 7429-90-5, Aluminum, uses  
RL: DEV (Device component use); USES (Uses)  
(cathode; **electroluminescence** from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)

IT 25087-26-7, Poly(methacrylic acid) 25704-18-1, Poly(sodium styrene-4-sulfonate) 26009-24-5, Poly(1,4-phenylene-1,2-ethenediyl)  
RL: DEV (Device component use); USES (Uses)  
(**electroluminescence** from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)

IT 190785-26-3P 190785-27-4P **190785-29-6P** 190785-30-9P  
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(**electroluminescence** from new polynorbornenes that contain blue-light-emitting and charge-transport side chains)

IT 602-55-1, 9-Phenylanthracene

RL: RCT (Reactant); RACT (Reactant or reagent)  
(**electroluminescence** from new polynorbornenes that contain  
blue-light-emitting and charge-transport side  
chains)

IT 190785-23-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(**electroluminescence** from new polynorbornenes that contain  
blue-light-emitting and charge-transport side  
chains)

IT 95-12-5, 5-Norbornene-2-methanol 589-15-1, 4-Bromobenzyl bromide  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(monomer synthesis; **electroluminescence** from new  
polynorbornenes that contain blue-light-emitting  
and charge-transport side chains)

IT 124454-24-6P 190785-19-4P, (5-Norbornenyl)methyl p-bromobenzyl Ether  
190785-20-7P 190785-22-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(monomer synthesis; **electroluminescence** from new  
polynorbornenes that contain blue-light-emitting  
and charge-transport side chains)

IT 23674-20-6P, 9-Bromo-10-phenylanthracene 190785-21-8P 190785-24-1P  
190785-25-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(monomer; **electroluminescence** from new polynorbornenes that  
contain blue-light-emitting and charge-transport  
side chains)

IT 126949-65-3  
RL: CAT (Catalyst use); USES (Uses)  
(polymerization catalyst; **electroluminescence** from new  
polynorbornenes that contain blue-light-emitting  
and charge-transport side chains)

IT 190785-29-6P  
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic  
preparation); PREP (Preparation); USES (Uses)  
(**electroluminescence** from new polynorbornenes that contain  
blue-light-emitting and charge-transport side  
chains)

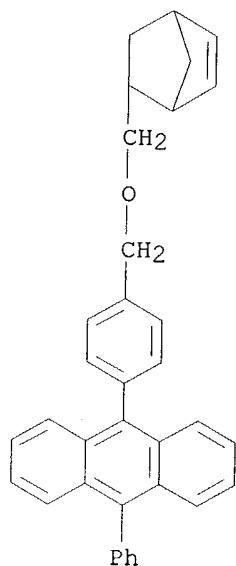
RN 190785-29-6 HCA

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-(5-[4-(1,1-dimethylethyl)phenyl]-  
1,3,4-oxadiazol-2-yl)-, bicyclo[2.2.1]hept-5-en-2-ylmethyl ester, polymer  
with 9-[4-[(bicyclo[2.2.1]hept-5-en-2-ylmethoxy)methyl]phenyl]-10-  
phenylanthracene (9CI) (CA INDEX NAME)

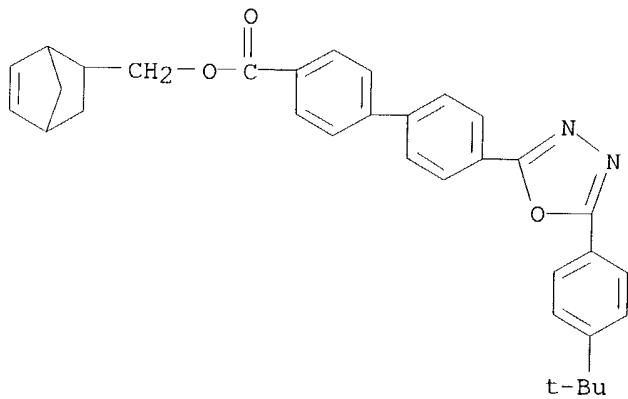
CM 1

CRN 190785-28-5

CMF C35 H30 O

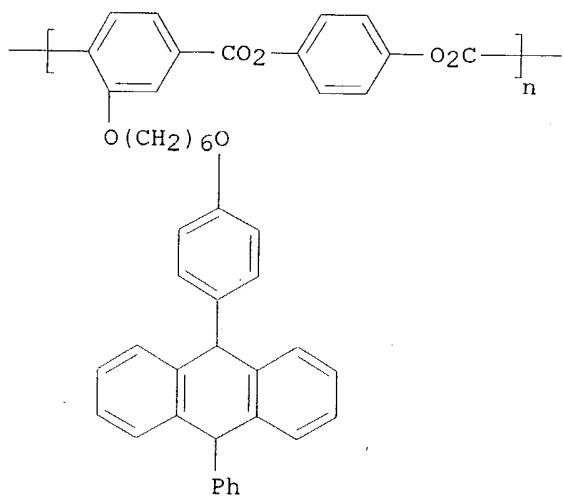


CM 2

CRN 190785-24-1  
CMF C33 H32 N2 O3

L67 ANSWER 10 OF 10 HCA COPYRIGHT 2004 ACS on STN  
125:223273 Blue **electroluminescence** mechanism of polyester  
derivative blend films. Peng, Junbiao; Yu, Byung-Yong; Pyun, Chong-Hong;  
Kim, Chang-Hong; Jin, Jung-Il (Solid State Chemistry Laboratory, Korea  
Inst. of Science and Technology, Seoul, 130-650, S. Korea). Japanese  
Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review  
Papers, 35(8), 4379-4382 (English) 1996. CODEN: JAPNDE. ISSN: 0021-4922.  
Publisher: Japanese Journal of Applied Physics.

GI



AB Blends of poly(N-vinylcarbazole) (I) with a new polyester having the structure II and 2-(4-biphenyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole at various weight ratios were used as the emitter in unilayer **electroluminescence (EL)** devices with an indium **cathode**. Analyses of fluorescence and **EL** spectra implied common emission energy states are formed in the blend films, which explains the possibility of maximum **EL** efficiency in blend films higher than that in either I and II. The photoluminescence (PL) and **EL** spectra show the maximum emission band red shifts slightly between 430 nm and 450 nm as the ratio of II increases, while the half width increases and a new peak around 525 nm appears. The new peak originates from the dimer formed by coupling of interchains in II. Both II and I can give rise to PL **emission** under UV **light**. The origin of PL and **EL** emission is analyzed.

CC 37-5 (Plastics Manufacture and Processing)

ST polyester polyvinylcarbazole blend blue **electroluminescence** mechanism

IT Luminescence

**Luminescence, electro-**  
(blue **electroluminescence** mechanism of films of  
polyester-poly(vinylcarbazole) blends containing oxadiazole derivative)

IT Plastics

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PROC (Process); USES (Uses)  
(polyester-poly(vinylcarbazole) blends, containing oxadiazole derivative; blue **electroluminescence** mechanism of films of)

IT 181258-06-0 181429-12-9

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PROC (Process); USES (Uses)  
(poly(vinylcarbazole) blends, containing oxadiazole derivative; blue **electroluminescence** mechanism of films of)

IT 25067-59-8, Poly(N-vinylcarbazole)

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PROC (Process); USES (Uses)  
(polyester blends, containing oxadiazole derivative; blue **electroluminescence** mechanism of films of)

IT 15082-28-7

RL: MOA (Modifier or additive use); USES (Uses)  
 (polyester-poly(vinylcarbazole) blends containing; blue  
**electroluminescence** mechanism of films of)

IT 181258-06-0

RL: PEP (Physical, engineering or chemical process); POF (Polymer in  
 formulation); PRP (Properties); PROC (Process); USES (Uses)  
 (poly(vinylcarbazole) blends, containing oxadiazole derivative; blue  
**electroluminescence** mechanism of films of)

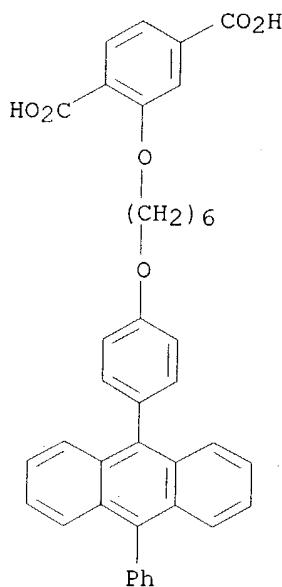
RN 181258-06-0 HCA

CN 1,4-Benzenedicarboxylic acid, 2-[[6-[4-(10-phenyl-9-anthracyanyl)phenoxy]hexyl]oxy]-, polymer with 1,4-benzenediol (9CI) (CA INDEX NAME)

CM 1

CRN 181258-05-9

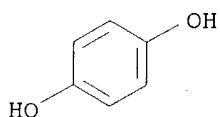
CMF C40 H34 O6



CM 2

CRN 123-31-9

CMF C6 H6 O2



=&gt; D L71 1-19 CBIB ABS HITSTR

L71 ANSWER 1 OF 19 HCA COPYRIGHT 2004 ACS on STN

140:329313 Organic **electroluminescent** device. Okuda, Daisuke; Sato, Katsuhiro; Mashimo, Kiyokazu; Agata, Takeshi; Ishii, Toru; Ozaki, Tadayoshi; Hirose, Eiichi; Yoneyama, Hiroto; Seki, Mieko (Fuji Xerox Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004111133 A2 20040408, 57 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-269792 20020917.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The devices comprises charge-transporting polyurethanes having structural repeating units containing moiety structure of I or II [Ar = (un)substituted Ph, (un)substituted monovalent (polynuclear) aromatic hydrocarbyl, etc.; X = divalent condensed polycyclic aromatic hydrocarbylene having 3-10 atom rings; k = 0, 1]. The devices, capable of being large-sized, provide high luminance and long service life.

IT 676593-13-8P 676593-15-0P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(organic **electroluminescent** device comprising polyamine polyurethane charge-transport agent)

RN 676593-13-8 HCA

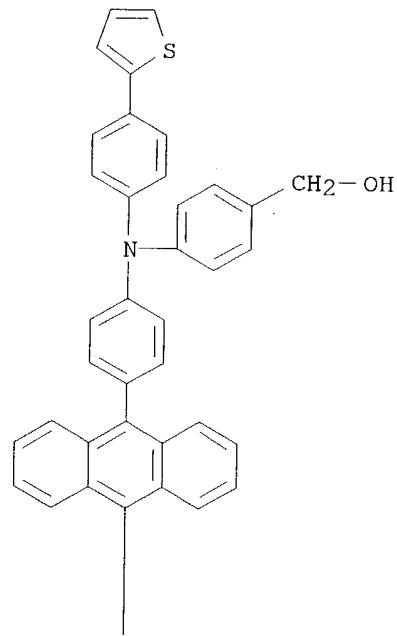
CN Benzenemethanol, 4,4'-[9,10-anthracenediylbis[4,1-phenylene[[4-(2-thienyl)phenyl]imino]]]bis-, polymer with 1,6-diisocyanatohexane (9CI) (CA INDEX NAME)

CM 1

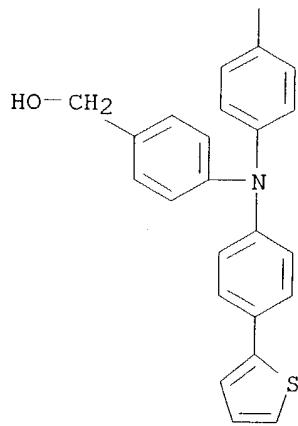
CRN 676593-12-7

CMF C60 H44 N2 O2 S2

PAGE 1-A



PAGE 2-A



CM 2

CRN 822-06-0  
CMF C8 H12 N2 O2OCN-(CH<sub>2</sub>)<sub>6</sub>-NCO

RN 676593-15-0 HCA

John Calve EIC- 1700

Page 132

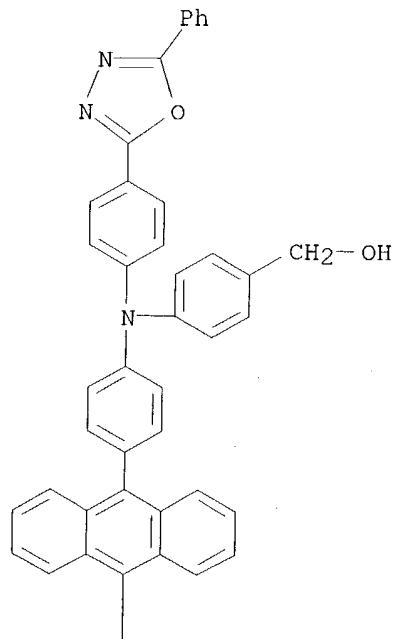
703-308-4139

CN Benzenemethanol, 4,4'-[9,10-anthracenediylbis[4,1-phenylene[[4-(5-phenyl-1,3,4-oxadiazol-2-yl)phenyl]imino]]]bis-, polymer with 1,6-diisocyanatohexane (9CI) (CA INDEX NAME)

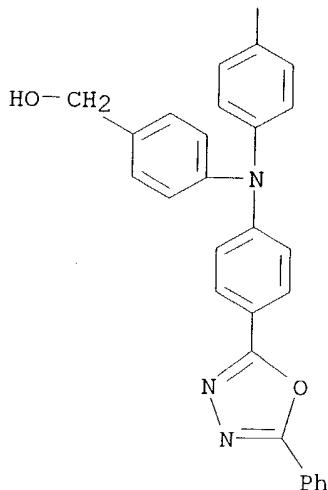
CM 1

CRN 676593-14-9  
CMF C68 H48 N6 O4

PAGE 1-A



PAGE 2-A



CM 2

CRN 822-06-0  
CMF C8 H12 N2 O2OCN-(CH<sub>2</sub>)<sub>6</sub>-NCO

L71 ANSWER 2 OF 19 HCA COPYRIGHT 2004 ACS on STN  
 140:278201 Organic **electroluminescent** device. Ishii, Toru; Okuda, Daisuke; Seki, Mieko; Yoneyama, Hiroto; Hirose, Eiichi; Ozaki, Tadayoshi; Agata, Takashi; Mashimo, Kiyokazu; Sato, Katsuhiro (Fuji Xerox Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004087396 A2 20040318, 47 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-249235 20020828.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The invention relates to an organic **electroluminescent** device comprising the charge transporting polyester containing the partial structure represented by I and II [X = divalent aromatic group; T = C1-6 divalent linear chain hydrocarbon and C2-10 divalent branched hydrocarbon groups; R1 = C1-10 hydrocarbon and aromatic groups; R2 = H, C1-10 hydrocarbon, C1-4 alkoxy, cyano, etc.; and i, j and k = 0 or 1].

IT 672921-50-5

RL: DEV (Device component use); USES (Uses)  
 (organic **electroluminescent** device comprising charge transporting polyester)

RN 672921-50-5 HCA

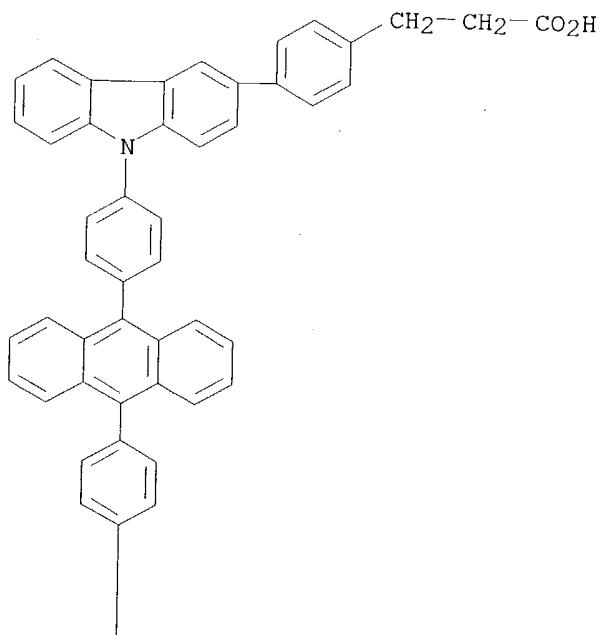
CN Benzenepropanoic acid, 4,4'-[9,10-anthracenediylbis(4,1-phenylene-9H-carbazole-9,3-diyl)]bis-, polymer with 1,2-ethanediol (9CI) (CA INDEX)

NAME)

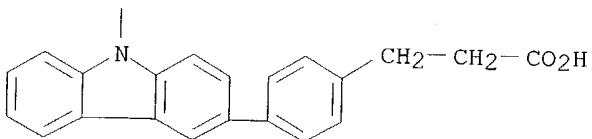
CM 1

CRN 672921-49-2  
CMF C68 H48 N2 O4

PAGE 1-A



PAGE 2-A



CM 2

CRN 107-21-1  
CMF C2 H6 O2

HO-CH2-CH2-OH

L71 ANSWER 3 OF 19 HCA COPYRIGHT 2004 ACS on STN  
140:67421 Poly(silanylenediethynylarylenes) for positive hole-transporting  
materials in organic **electroluminescent** devices. Oshita, Joji;

Kunai, Atsuaki (Tokuyama Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2004002806 A2 20040108, 28 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-107283 20030411. PRIORITY: JP 2002-111534 20020415.

AB The polymers are represented by [C.tplbond.CArC.tplbond.C(SiR1R2)n] [Ar = C15-100 arylene,  $\pi$ -excess C3-100 heteroarylene having N-containing ring,  $\pi$ -excess C8-100 heteroarylene free of N in ring, defined styrylene, defined phenylenevinylene; R1, R2 = alkyl, aryl, heteroaryl; n = 1-10] and have weight-average mol. weight 300-100,000. The polymers show stable **light-emitting** characteristics at high temperature

IT 637356-13-9P 637356-17-3P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (poly(silanylenediethynylarylenes) for pos. hole-transporting materials in organic **electroluminescent** devices)

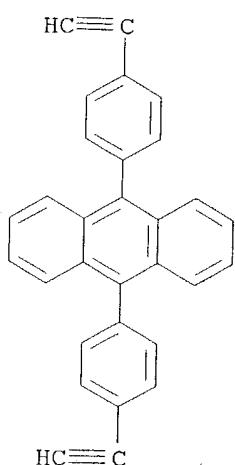
RN 637356-13-9 HCA

CN Silane, dichlorodiphenyl-, polymer with 9,10-bis(4-ethynylphenyl)anthracene (9CI) (CA INDEX NAME)

CM 1

CRN 489429-62-1

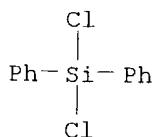
CMF C30 H18



CM 2

CRN 80-10-4

CMF C12 H10 Cl2 Si

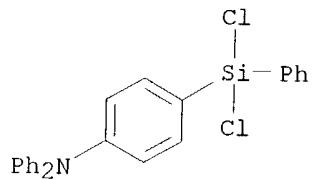


RN 637356-17-3 HCA

CN Benzenamine, 4-(dichlorophenylsilyl)-N,N-diphenyl-, polymer with 9,10-bis(6-ethynyl-2-naphthalenyl)anthracene (9CI) (CA INDEX NAME)

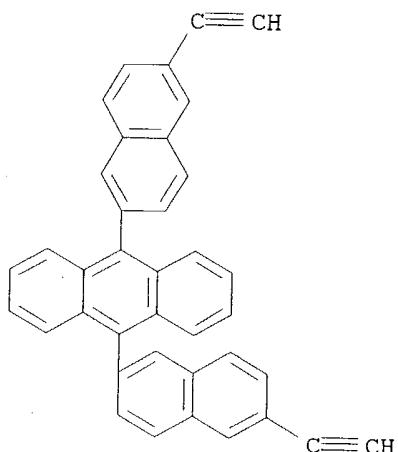
CM 1

CRN 637356-16-2  
CMF C24 H19 Cl2 N Si



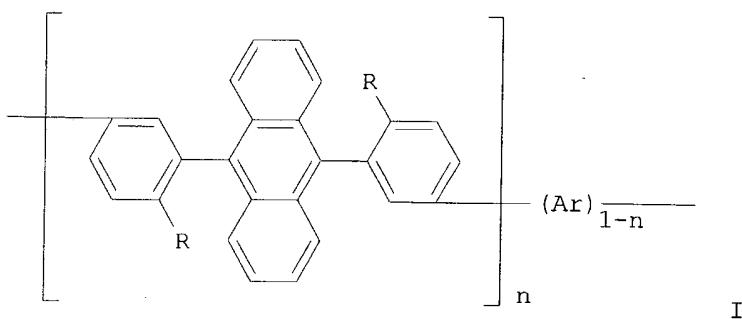
CM 2

CRN 637356-15-1  
CMF C38 H22



L71 ANSWER 4 OF 19 HCA COPYRIGHT 2004 ACS on STN  
138:409104 Blue **electroluminescent** polymer and organic  
**electroluminescence** device using the same. Son, Jhun Mo; Lee, Ji  
Hoon; Kang, In Nam (S. Korea). U.S. Pat. Appl. Publ. US 2003096137 A1  
20030522, 16 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-274048  
20021021. PRIORITY: KR 2001-71245 20011116.

GI



AB Blue **electroluminescent** polymers are described by the general formula I (Ar is a C6-26 aromatic group, or a C4-14 heteroarom. group which contains  $\geq 1$  heteroatom in the aromatic ring, where the aromatic group and the heteroarom. group may be unsubstituted or substituted with  $\geq 1$  C1-12 linear, branched, or cyclic alkyl group, alkoxy group, or amine group; R = H, a C1-12 linear, branched, or cyclic alkyl group or alkoxy group, or a C6-14 aromatic group which may be unsubstituted or substituted with  $\geq 1$  C1-12 linear, branched, or cyclic alkyl group, alkoxy group, or amine group; and n = 0.01-0.99). **Electroluminescent** devices employing the polymers are also described.

IT 528893-66-5P 528893-68-7P 528893-70-1P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(blue **electroluminescent** polymers with diphenylanthracene units and organic **electroluminescent** devices using them)

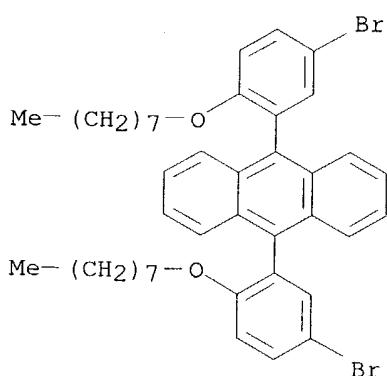
RN 528893-66-5 HCA

CN Anthracene, 9,10-bis[5-bromo-2-(octyloxy)phenyl]-, polymer with 9,10-dibromoanthracene (9CI) (CA INDEX NAME)

CM 1

CRN 528893-64-3

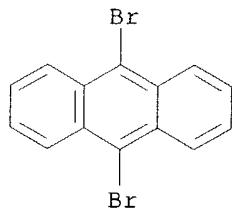
CMF C42 H48 Br2 O2



CM 2

CRN 523-27-3

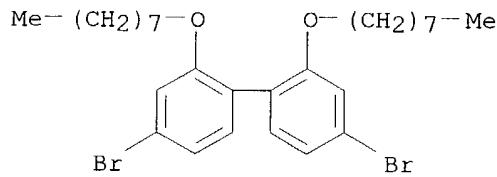
CMF C14 H8 Br2



RN 528893-68-7 HCA  
 CN Anthracene, 9,10-bis[5-bromo-2-(octyloxy)phenyl]-, polymer with  
 4,4'-dibromo-2,2'-bis(octyloxy)-1,1'-biphenyl (9CI) (CA INDEX NAME)

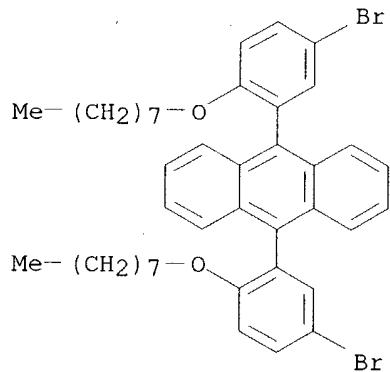
CM 1

CRN 528893-67-6  
 CMF C28 H40 Br2 O2



CM 2

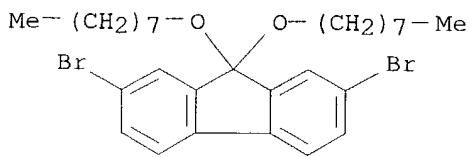
CRN 528893-64-3  
 CMF C42 H48 Br2 O2



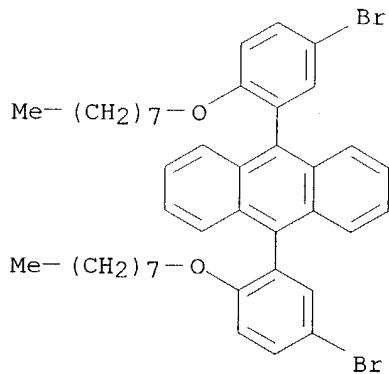
RN 528893-70-1 HCA  
 CN Anthracene, 9,10-bis[5-bromo-2-(octyloxy)phenyl]-, polymer with  
 2,7-dibromo-9,9-bis(octyloxy)-9H-fluorene (9CI) (CA INDEX NAME)

CM 1

CRN 528893-69-8  
 CMF C29 H40 Br2 O2



CM 2

CRN 528893-64-3  
CMF C42 H48 Br<sub>2</sub> O<sub>2</sub>

L71 ANSWER 5 OF 19 HCA COPYRIGHT 2004 ACS on STN  
 138:354605 Novel blue-light emitting polymers containing  
 dinaphthylanthracene. Zheng, Shiying; Shi, Jianmin (Eastman Kodak Co.,  
 Rochester, NY, 14650, USA). Polymeric Materials Science and Engineering,  
 84, 337-338 (English) 2001. CODEN: PMSEDG. ISSN: 0743-0515. Publisher:  
 American Chemical Society.

AB Novel blue-light emitting polymers containing blue  
 chromophore 9,10-di(2-naphthyl)anthracene were designed and synthesized.  
 The resulting polymers show high thermal decomposition temps. and are soluble  
 in organic solvents. Absorption and emission spectra indicate that the active  
 chromophores in the polymers are 9,10-di(2-naphthyl)anthracenes. The  
 polymers show blue photoluminescence in solution and solid state. The single  
 layer LED emit blue lights with low turn-on voltages.

P P 337370-61-3P 337370-62-4. 337368-99-7P 337369-03-6P 337369-07-0P  
 391957-77-0P 391957-78-1P 391957-79-2. P.

IT 337369-41-2P 519188-94-4P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (blue-light-emitting polymers containing  
 dinaphthylanthracene chromophores)

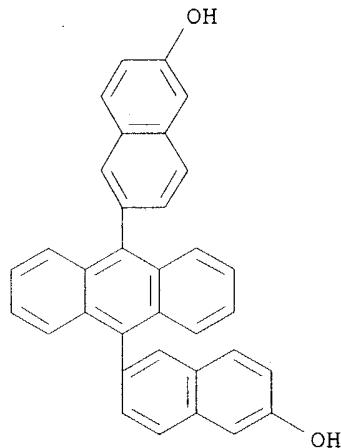
RN 337369-41-2 HCA

CN 1H-Indene-5-carboxylic acid, 3-(4-carboxyphenyl)-2,3-dihydro-1,1,3-trimethyl-, polymer with 6,6'-(9,10-anthracenediyl)bis[2-naphthalenol] (9CI) (CA INDEX NAME)

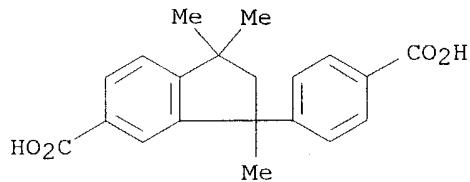
CM 1

CRN 337369-40-1

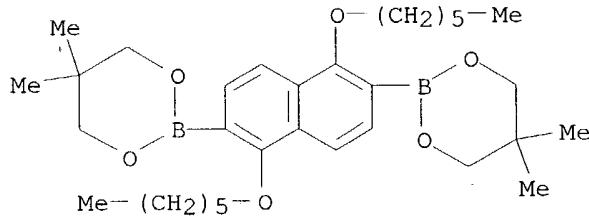
CMF C34 H22 O2



CM 2

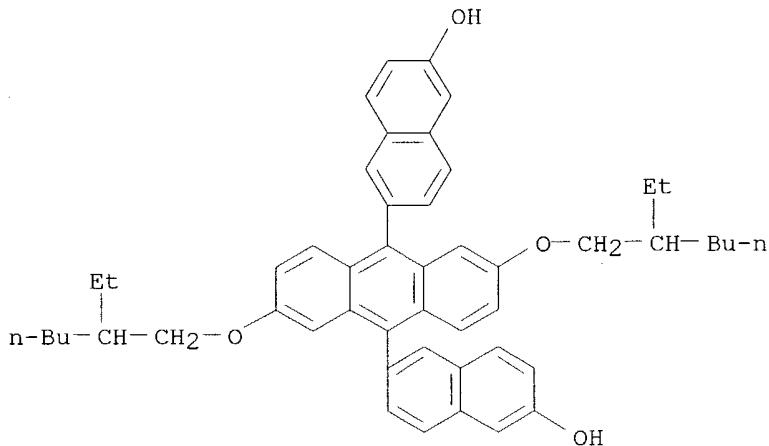
CRN 3569-18-4  
CMF C20 H20 O4RN 519188-94-4 HCA  
CN 2-Naphthalenol, 6,6'-[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]bis-, polymer with 2,2'-[1,5-bis(hexyloxy)-2,6-naphthalenediyl]bis[5,5-dimethyl-1,3,2-dioxaborinane] (9CI) (CA INDEX NAME)

CM 1

CRN 519188-93-3  
CMF C32 H50 B2 O6

CM 2

CRN 337369-35-4  
 CMF C50 H54 O4



L71 ANSWER 6 OF 19 HCA COPYRIGHT 2004 ACS on STN

138:345657 Chemiluminescent properties of polyurethane fluorophores containing red and blue chromophore moieties. Kim, Dae-Wook; Lee, Chil-Won; Joo, Sang-Woo; Gong, Myoung-Seon (Department of Chemistry, Dankook University, Chung-nam, 330-714, S. Korea). Journal of Luminescence, 99(3), 205-212 (English) 2002. CODEN: JLUMA8. ISSN: 0022-2313. Publisher: Elsevier Science B.V..

AB Polyurethane copolymer fluorophores-containing perylene tetracarboxylic diimide and di-Ph anthracene units were prepared to examine the chemiluminescent properties. The UV-visible spectrophotometric, photoluminescent and chemiluminescent characteristics were studied for the monomeric and polymeric fluorophores. The Na salicylate-catalyzed reaction of bis(2-carbopentyloxy-3,5,6-trichlorophenyl)oxalate with H<sub>2</sub>O<sub>2</sub> provided a strong chemiluminescent **light emission** from red to blue color according to the mixing ratio of 2 chromophore units as analogous to the photoluminescent spectra. Although the chemiluminescent intensity was found to decay biexponentially as a function of measuring time, the chemiluminescent glow lasted for >24 h and was visible with the naked eye.

IT 410540-88-4

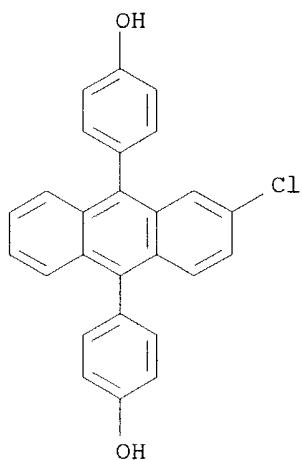
RL: PRP (Properties)  
 (chemiluminescent properties of polyurethane fluorophores containing red and blue chromophore moieties)

RN 410540-88-4 HCA

CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone, 5,6,12,13-tetrakis[4-(1,1-dimethylethyl)phenoxy]-2,9-bis(3-hydroxypropyl)-, polymer with 4,4'-(2-chloro-9,10-anthracenediyl)bis[phenol] and 1,6-diisocyanatohexane (9CI) (CA INDEX NAME)

CM 1

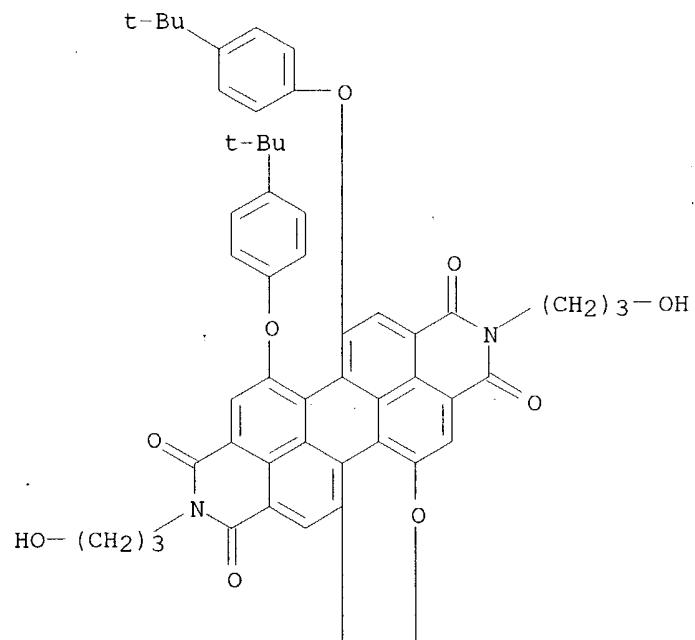
CRN 410540-86-2  
 CMF C26 H17 Cl O2



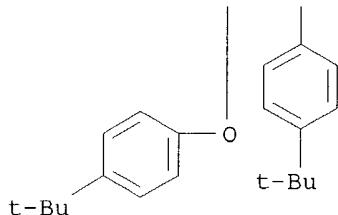
CM 2

CRN 397886-04-3  
CMF C70 H70 N2 O10

PAGE 1-A



PAGE 2-A



CM 3

CRN 822-06-0  
CMF C8 H12 N2 O2OCN—(CH<sub>2</sub>)<sub>6</sub>—NCO

L71 ANSWER 7 OF 19 HCA COPYRIGHT 2004 ACS on STN

137:338326 Synthesis and characterization of novel ladder polymer containing diphenylanthracene. Zheng, Shiying; Shi, Jianmin (Research and Development, Eastman Kodak Company, Rochester, NY, 14650, USA). Polymer Preprints (American Chemical Society, Division of Polymer Chemistry), 43(2), 599-600 (English) 2002. CODEN: ACPPAY. ISSN: 0032-3934.

Publisher: American Chemical Society, Division of Polymer Chemistry.

AB Novel ladder polymers containing highly fluorescent 9,10-diphenylanthracene were designed and synthesized. The polymer was prepared by a soluble precursor route, and was soluble in organic solvents. The structure was confirmed by NMR anal. The polymer showed a high thermal decomposition temperature and no T<sub>g</sub> due to

the rigid nature of the ladder structure. The polymers exhibited intense green photoluminescence in solution and the solid state. The unique structure and optical property make it a potential candidate for electronic applications such as **light emitting** diodes.

IT 474311-03-0P

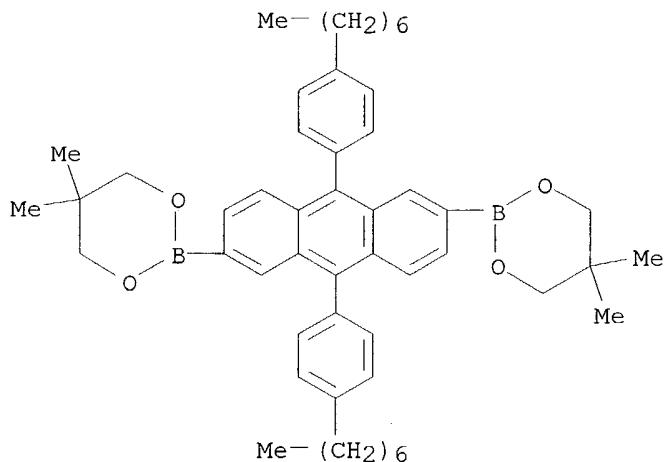
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (single-stranded ladder precursor; synthesis and characterization of novel ladder polymers containing diphenylanthracene)

RN 474311-03-0 HCA

CN Methanone, (2,5-dibromo-1,4-phenylene)bis[(4-decylophenyl)-, polymer with 2,2'-[9,10-bis(4-heptylphenyl)-2,6-anthracenediyl]bis[5,5-dimethyl-1,3,2-dioxaborinane] (9CI) (CA INDEX NAME)

CM 1

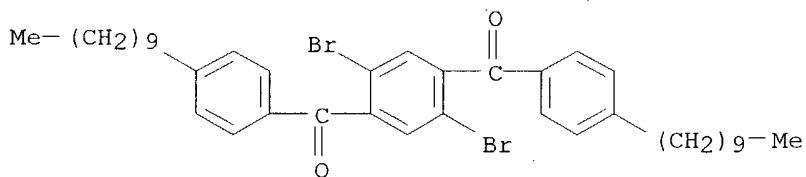
CRN 474311-02-9  
CMF C50 H64 B2 O4



CM 2

CRN 136296-63-4

CMF C40 H52 Br2 O2



IT 474311-03-0DP, benzylic alc. derivative, cyclized

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (synthesis and characterization of novel ladder polymers containing  
 diphenylanthracene)

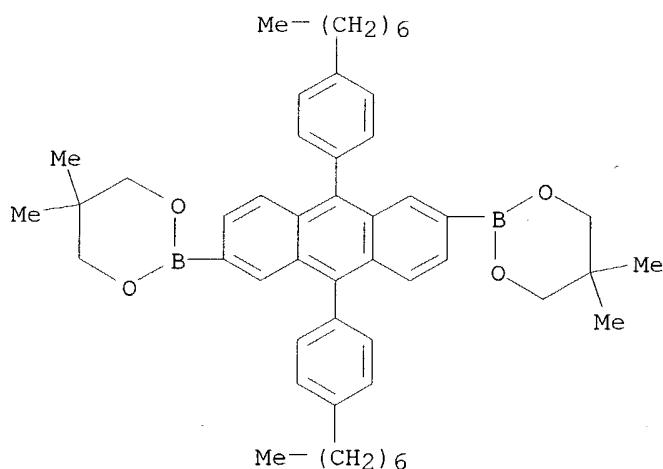
RN 474311-03-0 HCA

CN Methanone, (2,5-dibromo-1,4-phenylene)bis[(4-decylphenyl)-, polymer with  
 2,2'-[9,10-bis(4-heptylphenyl)-2,6-anthracenediyl]bis[5,5-dimethyl-1,3,2-  
 dioxaborinane] (9CI) (CA INDEX NAME)

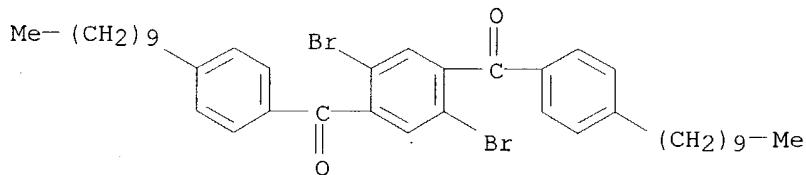
CM 1

CRN 474311-02-9

CMF C50 H64 B2 O4



CM 2

CRN 136296-63-4  
CMF C40 H52 Br2 O2

L71 ANSWER 8 OF 19 HCA COPYRIGHT 2004 ACS on STN

137:325854 Chemiluminescent properties of polymeric blue fluorophores containing diphenylanthracene unit. Park, Hoon-Young; Geum, Neri; Ko, Jaejung; Gong, Myoung-Seon (Department of Chemistry, Dankook University, Cheonan, Chungnam, 330-714, S. Korea). Dyes and Pigments, 54(1), 59-66 (English) 2002. CODEN: DYPIDX. ISSN: 0143-7208. Publisher: Elsevier Science Ltd..

AB New conjugated and non-conjugated alternating block copolymers containing 9,10-diphenyl-2-chloroanthracene moieties in the main chain were synthesized via Williamson synthesis for the blue chemiluminescent fluorophore. UV-vis absorption and luminescent characteristics including chemiluminescence were measured and compared with model fluorophore 9,10-bis(p-methoxyphenyl)-2-chloroanthracene. Polymers displayed blue photoluminescence in solution with maximum around 430 nm. Tetra-Me ammonium salicylate-catalyzed reaction of hydrogen peroxide with bis(2-carbopentyloxy-3,5,6-trichlorophenyl)oxalate produced a strong chemiluminescent blue **light emission** with wavelength of 440 nm in the presence of the polymeric fluorophore. The chemiluminescent intensity decayed exponentially and the glow of chemiluminescence maintained more than 12 h and was visible with naked eye.

IT 473279-38-8P 473279-41-3P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (chemiluminescent properties of polymeric blue fluorophores containing

diphenylanthracene unit)

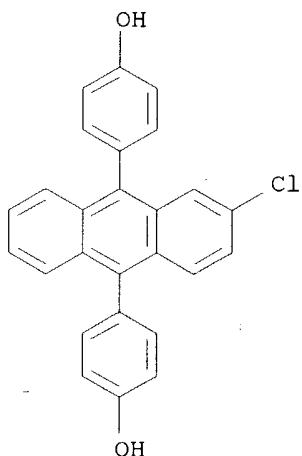
RN 473279-38-8 HCA

CN Phenol, 4,4'-(2-chloro-9,10-anthracenediyl)bis-, polymer with  
1,2-dichloroethane (9CI) (CA INDEX NAME)

CM 1

CRN 410540-86-2

CMF C26 H17 Cl O2



CM 2

CRN 107-06-2

CMF C2 H4 Cl2

Cl-CH<sub>2</sub>-CH<sub>2</sub>-Cl

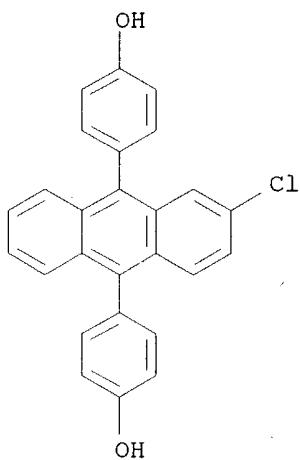
RN 473279-41-3 HCA

CN Phenol, 4,4'-(2-chloro-9,10-anthracenediyl)bis-, polymer with  
1,6-dichlorohexane (9CI) (CA INDEX NAME)

CM 1

CRN 410540-86-2

CMF C26 H17 Cl O2



CM 2

CRN 2163-00-0  
CMF C6 H12 Cl2Cl-(CH<sub>2</sub>)<sub>6</sub>-Cl

L71 ANSWER 9 OF 19 HCA COPYRIGHT 2004 ACS on STN  
 136:370223 Chemiluminescent properties of copolymers containing red and blue chromophores. Lee, Chil-Won; Joo, Sang-Woo; Ko, Jaejung; Kim, Jong-Seung; Lee, Shim-Sung; Gong, Myoung-Seon (Department of Chemistry, Dankook University, Cheonan, Chungnam, 330-714, S. Korea). Synthetic Metals, 126(1), 97-104 (English) 2002. CODEN: SYMEDZ. ISSN: 0379-6779.

Publisher: Elsevier Science S.A..

AB Polyester fluorophores containing red and blue **light-emitting** chromophore units were prepared by copolycondensation of perylene tetracarboxydiimide and di-Ph anthracene derivative with sebacyl chloride for the chemiluminescence. The properties of fluorophore polymers were studied by UV-Vis spectrophotometric, photoluminescent and chemiluminescent investigation. The intensities of UV-Vis absorbance, photoluminescence and chemiluminescence spectra appeared to systematically increase as the content of two monomers. The sodium salicylate-catalyzed reaction of bis(2-carbopentyloxy-3,5,6-trichlorophenyl)oxalate with hydrogen peroxide provided a strong chemiluminescent light changing from red to blue according to the content of two chromophore units; these were similar to the photoluminescent spectra. The chemiluminescent intensity was decayed biexponentially, but the glow of chemiluminescence maintained more than 24 h and was visible with the naked eye.

IT 410540-87-3P 416849-14-4P

RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (synthesis and chemiluminescent properties of copolymers containing red and blue chromophores)

RN 410540-87-3 HCA

CN Decanedioyl dichloride, polymer with 4,4'-(2-chloro-9,10-antracenediyl)bis[phenol] and 5,6,12,13-tetrakis[4-(1,1-

D. Garrett

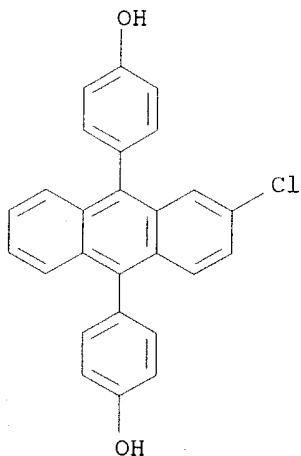
10/786,812

06/29/2004

dimethylethyl)phenoxy]-2,9-bis(3-hydroxypropyl)anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone (9CI) (CA INDEX NAME)

CM 1

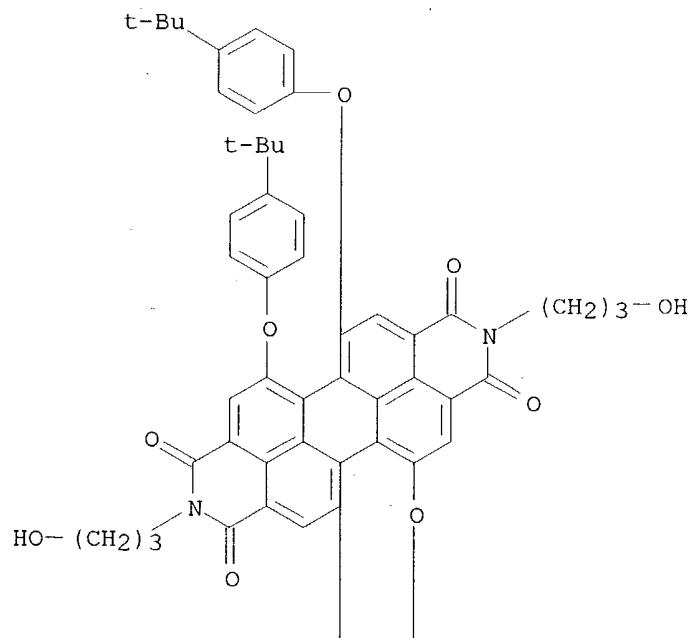
CRN 410540-86-2  
CMF C26 H17 Cl O2



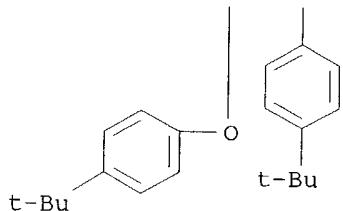
CM 2

CRN 397886-04-3  
CMF C70 H70 N2 O10

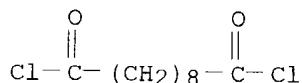
PAGE 1-A



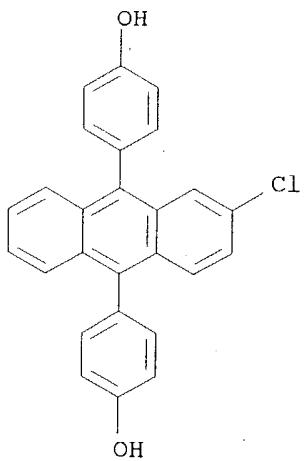
PAGE 2-A



CM 3

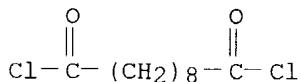
CRN 111-19-3  
CMF C10 H16 Cl2 O2RN 416849-14-4 HCA  
CN Decanedioyl dichloride, polymer with 4,4'-(2-chloro-9,10-anthracenediyl)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 410540-86-2  
CMF C26 H17 Cl O2

CM 2

CRN 111-19-3  
CMF C10 H16 Cl2 O2



L71 ANSWER 10 OF 19 HCA COPYRIGHT 2004 ACS on STN

136:326194 Synthesis and characterization of poly(aryl ether) containing diphenylanthracene and benzoxazolyl-phenylene as emitting chromophore. Kwon, Soon-Ki; Kim, Yun-Hi; Shin, Sung Chul (Dept. of Polymer Science & Engineering and Research Institute of Industrial Technology, Gyeongsang National University, Jinju, 660-701, S. Korea). Bulletin of the Korean Chemical Society, 23(1), 17-18 (English) 2002. CODEN: BKCSDE. ISSN: 0253-2964. Publisher: Korean Chemical Society.

AB A new blue **light-emitting** polymer (poly(diphenylanthracene-benzoxazolyl phenylene), poly(DBP)) was prepared by etherification of 9,10-bis(4'-hydroxyphenyl)anthracene with 1-(2-benzoxazolyl)-2',6'-difluorobenzene. The polymer was characterized by gel permeation chromatog., differential scanning calorimetry, UV spectroscopy, photoluminescence, and **electroluminescence** measurements. After spin-casting, the polymer film was examined on its **light emitting** properties.

IT 412278-57-0P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(preparation and **light-emitting** properties of aromatic polyether based on diphenylanthracene and benzoxazolylbenzene)

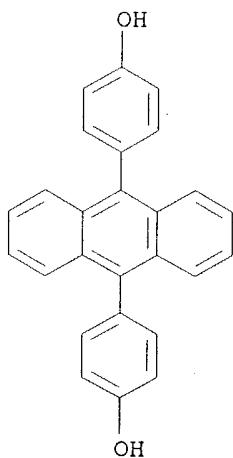
RN 412278-57-0 HCA

CN Phenol, 4,4'-(9,10-anthracenediyl)bis-, polymer with 2-(2,6-difluorophenyl)benzoxazole (9CI) (CA INDEX NAME)

CM 1

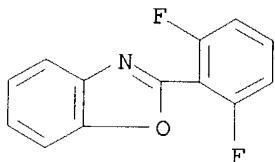
CRN 179803-79-3

CMF C26 H18 O2



CM 2

CRN 152993-82-3  
 CMF C13 H7 F2 N O



L71 ANSWER 11 OF 19 HCA COPYRIGHT 2004 ACS on STN  
 136:310249 Synthesis and properties of violet **light-emitting** polymeric fluorophore. Lee, Chil-Won; Joo, Sang-Woo; Kim, Ohyoung; Ko, Jaejung; Gong, Myoung-Seon (Department of Chemistry, Dankook University, Chungnam, Cheonan, 330-714, S. Korea). Dyes and Pigments, 52(1), 37-45 (English) 2002. CODEN: DYPIDX. ISSN: 0143-7208. Publisher: Elsevier Science Ltd..

AB Chemiluminescent violet **light-emitting** polymeric fluorophores were synthesized by copolycondensation of N,N'-dihydroxypropyl-1,6,7,12-tetrakis(p-tert-butylphenoxy)-3,4,9,10-perylene tetracarboxydiimide and 2-chloro-9,10-di(p-hydroxyphenyl)anthracene with sebacyl chloride or hexamethylene diisocyanate. The properties of fluorophore polymers were studied by absorption and photoluminescent spectroscopies. The intensities of UV-vis absorbance and photoluminescence spectra appeared at the blue side and the red side of the spectral region. Peroxyoxalate chemiluminescence of polymers provided a strong chemiluminescent violet **light** **emission** according to the content of two chromophore units; these were similar to the photoluminescent spectra.

IT 410540-87-3P 410540-88-4P  
 RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

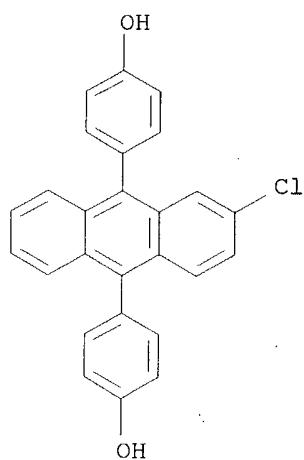
(synthesis and properties of violet **light-emitting** polymeric fluorophore)

RN 410540-87-3 HCA

CN Decanedioyl dichloride, polymer with 4,4'-(2-chloro-9,10-anthracenediyl)bis[phenol] and 5,6,12,13-tetrakis[4-(1,1-dimethylethyl)phenoxy]-2,9-bis(3-hydroxypropyl)anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone (9CI) (CA INDEX NAME)

CM 1

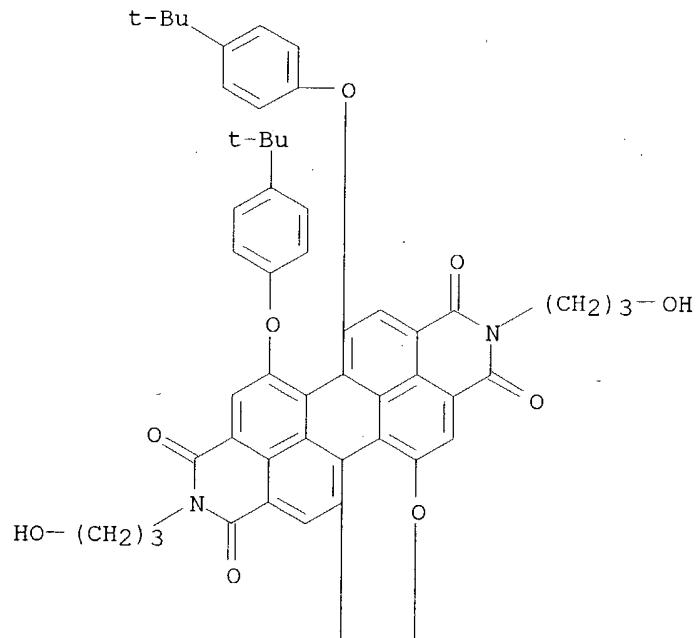
CRN 410540-86-2  
 CMF C26 H17 Cl O2



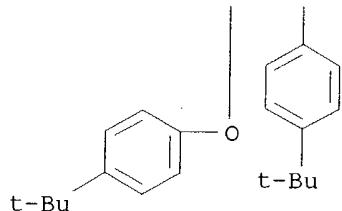
CM 2

CRN 397886-04-3  
CMF C70 H70 N2 O10

PAGE 1-A

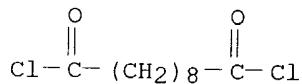


PAGE 2-A



CM 3

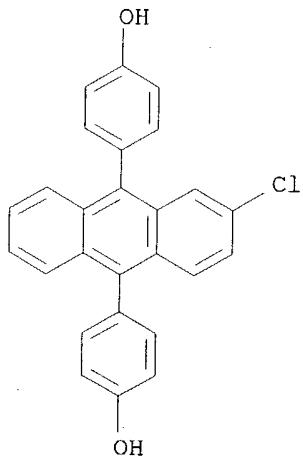
CRN 111-19-3  
 CMF C10 H16 Cl2 O2



RN 410540-88-4 HCA  
 CN Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone,  
 5,6,12,13-tetrakis[4-(1,1-dimethylethyl)phenoxy]-2,9-bis(3-hydroxypropyl)-  
 , polymer with 4,4'-(2-chloro-9,10-anthracenediyl)bis[phenol] and  
 1,6-diisocyanatohexane (9CI) (CA INDEX NAME)

CM 1

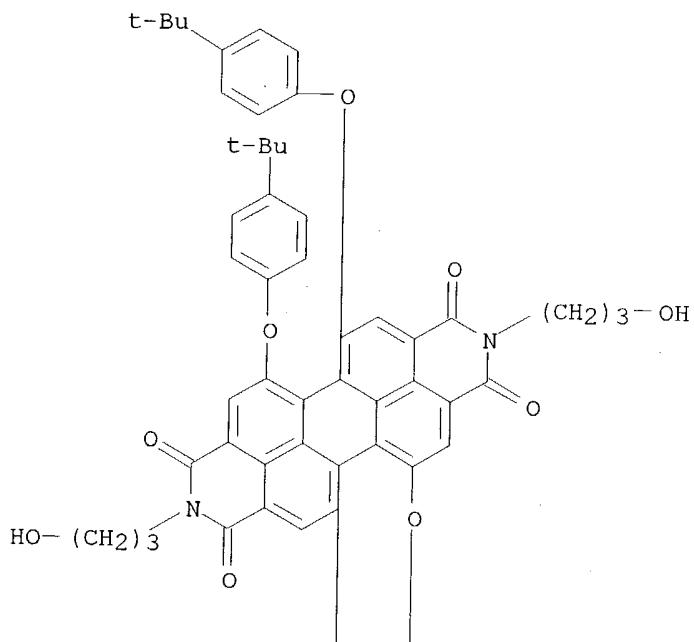
CRN 410540-86-2  
 CMF C26 H17 Cl O2



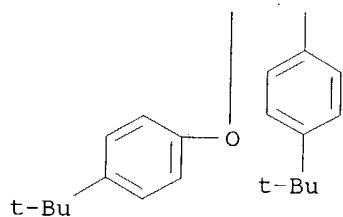
CM 2

CRN 397886-04-3  
 CMF C70 H70 N2 O10

PAGE 1-A



PAGE 2-A



CM 3

CRN 822-06-0

CMF C8 H12 N2 O2

OCN-(CH2)6-NCO

L71 ANSWER 12 OF 19 HCA COPYRIGHT 2004 ACS on STN  
 136:103028 Charge carrier transport in aromatic polyimides and  
 polyimide/J-aggregate composites. Tameev, Alek R.; Kozlov, Aleksey A.;  
 Mal'tsev, Eugene I.; Lypenko, Dmitry A.; Bobonkin, Vladimir V.; Vannikov,  
 Anatoly V. (Frumkin Institute of Electrochemistry of the Russian Academy  
 of Sciences, Moscow, 117071, Russia). Proceedings of SPIE-The  
 International Society for Optical Engineering, 4105(Organic Light-Emitting

Materials and Devices IV), 443-449 (English) 2001. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB Charge carrier transport in aromatic polyimides based on 9,10-bis(aminophenyl)anthracene or 9,10-bis(phenylthio)anthracene and their composites with dye J-aggregates was studied using conventional time-of-flight techniques. The elec. field and temperature dependencies of

both hole and electron drift mobility were observed. In amorphous films of the soluble polyimide, the drift mobility was found to reach the value of  $10^{-4}$  cm<sup>2</sup> V<sup>-1</sup> s<sup>-1</sup>. In films of the insol. polyimide containing a crystalline phase,

the mobility was lower by one or two orders of magnitude. The result is attributed to the presence of cavities in the crystalline film. The applicability of known theor. models describing the temperature and elec. field dependencies of mobility is discussed. J-aggregates, formed in the soluble polyimides doped with cyanine dye mols., play an active role in charge carrier transport in the **electroluminescence** composites.

IT 106726-02-7 133003-62-0 157914-52-8

168026-62-8

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)  
(charge carrier transport in aromatic polyimides and polyimide/J-aggregate composites)

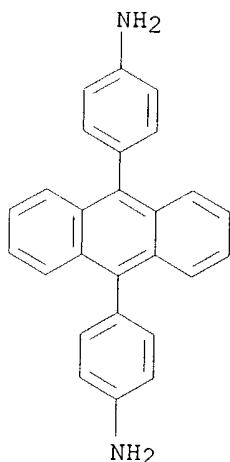
RN 106726-02-7 HCA

CN 1,3-Isobenzofurandione, 5,5'-carbonylbis-, polymer with 4,4'-(9,10-anthracenediyl)bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 106704-35-2

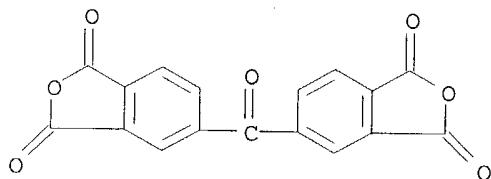
CMF C26 H20 N2



CM 2

CRN 2421-28-5

CMF C17 H6 O7



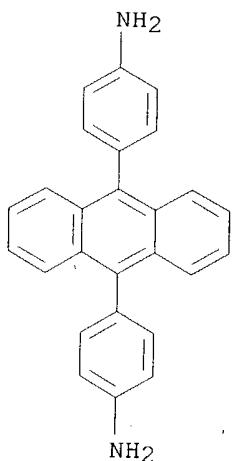
RN 133003-62-0 HCA

CN 1,3-Isobenzofurandione, 5,5'-oxybis-, polymer with 4,4'-(9,10-anthracenediyl)bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 106704-35-2

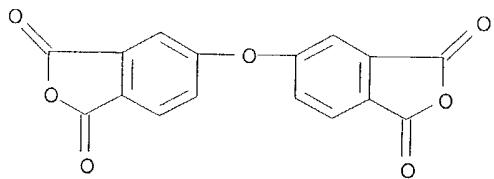
CMF C26 H20 N2



CM 2

CRN 1823-59-2

CMF C16 H6 O7



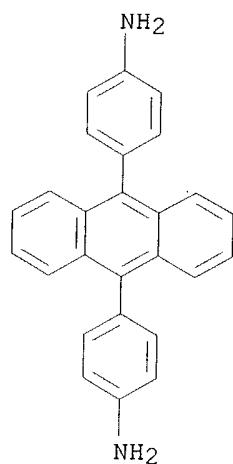
RN 157914-52-8 HCA

CN 1,3-Isobenzofurandione, 5,5'-sulfonylbis-, polymer with 4,4'-(9,10-anthracenediyl)bis[benzenamine] (9CI) (CA INDEX NAME)

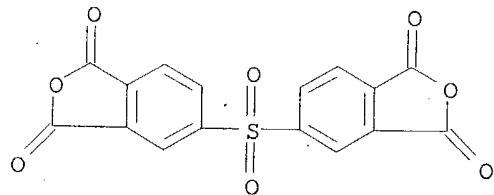
CM 1

CRN 106704-35-2

CMF C26 H20 N2

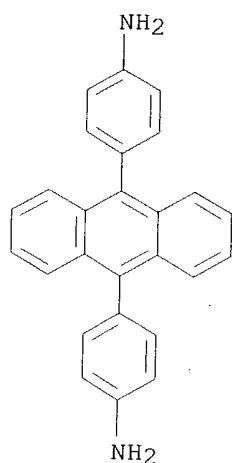


CM 2

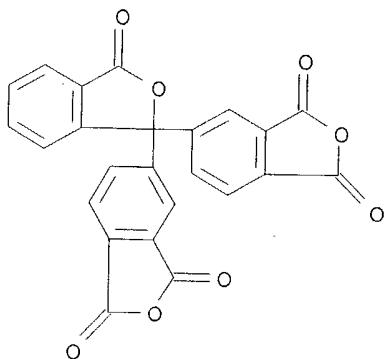
CRN 2540-99-0  
CMF C16 H6 O8 SRN 168026-62-8 HCA  
CN [5,1':1'(3'H),5''-Terisobenzofuran]-1,1'',3,3',3'''-pentone, polymer with  
4,4'-(9,10-anthracenediyl)bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 106704-35-2  
CMF C26 H20 N2



CM 2

CRN 47693-21-0  
CMF C24 H10 O8

L71 ANSWER 13 OF 19 HCA COPYRIGHT 2004 ACS on STN  
 134:116413 **Electroluminescent** properties of anthracene-containing polyimides. Mal'tsev, Eugene I.; Brusentseva, Mariy A.; Berendyaev, Vladimir I.; Kolesnikov, Vladislav A.; Kotov, Boris V.; Vannikov, Anatoly V. (Frumkin Institute of Electrochemistry, Russian Academy of Sciences, Moscow, Russia). Proceedings of SPIE-The International Society for Optical Engineering, 3797(Organic Light-Emitting Materials and Devices III), 350-358 (English) 1999. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB The **electroluminescence (EL)** of donor-acceptor polyimides prepared from 9,10-bis(m-aminophenylthio)-anthracene (BPTA) and 1,3-bis(3,4-dicarboxyphenoxy)benzene or 2,2-bis[4-(3,4-dicarboxyphenoxy)phenyl]-propane dianhydrides was studied. The aromatic polyimides with and without sulfur atoms in the backbone, were evaluated as electron-hole transporting and **light-emitting** materials for use in single- and multilayer **electroluminescent** diodes. These polyimides are efficient electron and hole conductors and

also exhibit intense photoluminescence of exciplex origin. Some of the polyimides have been used as hole conducting layers with tris(8-quinolinolato)aluminum complex (Alq3) as electron conducting layer in bilayer LEDs of high brightness. A direct correlation was revealed between transport characteristics and **electroluminescent** properties of these electroactive materials. At room temperature, the electron mobility and hole drift mobility directly measured by conventional TOF techniques indicate effective bipolar transport. The simplicity of synthesis, high thermal stability, organic solvent solubility, and excellent film-forming ability make these polyimides good candidates for technol. applications. The band structure, bipolar transport, and electron donor-acceptor interactions in test one-layer and bilayer LEDs based on the polyimides are described.

IT 168026-62-8

RL: PRP (Properties)

(band structure and **electroluminescence** and carrier transport of electroactive anthracene-containing polyimide-polythioethers vs. polyimides for LEDs)

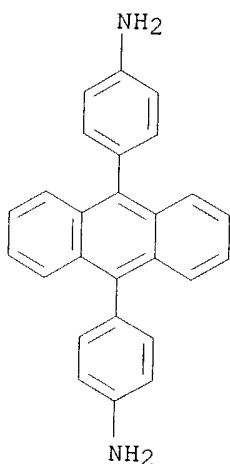
RN 168026-62-8 HCA

CN [5,1':1'(3'H),5''-Terisobenzofuran]-1,1'',3,3',3''-pentone, polymer with 4,4'-(9,10-anthracenediyl)bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 106704-35-2

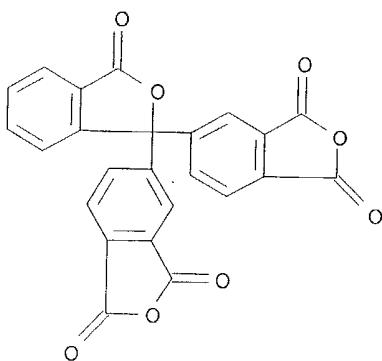
CMF C26 H20 N2



CM 2

CRN 47693-21-0

CMF C24 H10 O8



L71 ANSWER 14 OF 19 HCA COPYRIGHT 2004 ACS on STN

133:267329 **Electroluminescent** properties of anthracene-containing polyimides. Mal'tsev, Eugene I.; Brusentseva, Maria A.; Lypenko, Dmitry A.; Berendyaev, Vladimir I.; Kolesnikov, Vladislav A.; Kotov, Boris V.; Vannikov, Anatoly V. (Frumkin Institute of Electrochemistry of the Russian Academy of Sciences, Moscow, 117071, Russia). Polymers for Advanced Technologies, 11(7), 325-329 (English) 2000. CODEN: PADTE5. ISSN: 1042-7147. Publisher: John Wiley & Sons Ltd..

AB Optical and **electroluminescent** properties of a new soluble anthracene-containing polyimide (ACPI) was studied. Solubility of ACPI in organic solvents allows direct spin casting of the polymer films exhibiting intense photo- and **electroluminescence** (EL) in the visible range. This nonconjugated polymer was used as emitting and electron-hole transporting layers in polymer **light-emitting** devices (LEDs). EL properties of the uni- and bilayer LEDs are discussed in terms of the band structure, bipolar transport and electron donor-acceptor interactions.

IT 298710-50-6

RL: PRP (Properties)

(**electroluminescent** properties of anthracene-containing polyimides)

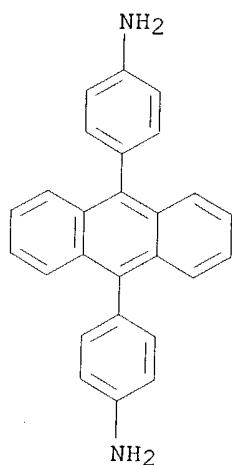
RN 298710-50-6 HCA

CN 1,2-Benzenedicarboxylic acid, 4,4'-(3-oxo-1(3H)-isobenzofuranylidene)bis-, polymer with 4,4'-(9,10-anthracenediyl)bis[benzenamine] (9CI) (CA INDEX NAME)

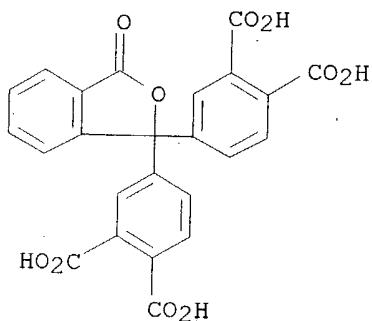
CM 1

CRN 106704-35-2

CMF C26 H20 N2



CM 2

CRN 27529-53-9  
CMF C24 H14 O10

L71 ANSWER 15 OF 19 HCA COPYRIGHT 2004 ACS on STN

132:12558 Soluble rigid-flexible polyethers containing bis(biphenyl)anthracene or bis(styryl)anthracene units in the main chain for **light-emitting** applications. Konstandakopoyloy, Fotini D.; Kallitsis, Jannis K. (Department of Chemistry, University of Patras, Patras, GR 265 00, Greece). Journal of Polymer Science, Part A: Polymer Chemistry, 37(20), 3826-3837 (English) 1999. CODEN: JPACEC. ISSN: 0887-624X. Publisher: John Wiley & Sons, Inc..

AB New rigid-flexible polyethers containing bis(biphenyl)anthracene or bis(styryl)anthracene units in the main chain were synthesized and characterized by viscometry, thermal and mech. anal., NMR, UV-vis, and luminescence spectroscopy. The polyethers containing bis(styryl)anthracene units in the main chain form free-standing films either from solution casting or after melt pressing at temps. where they are thermally stable. The length of the flexible spacer influences the thermal and mech. behavior of these polymers. The isotropization temperature as well as the glass transition temperature show an odd-even effect depending on the spacer segment length. Films with high modulus at room temperature and glass transition temps. in the range 74-103°C were obtained using dynamic mech. anal. These

polymers show bright-yellow photoluminescence with maximum at 580 nm in solution

In the solid state, the luminescence maximum is either red or blue shifted depending on the number of the methylene units in the aliphatic segment. The polyethers containing bis(biphenyl)anthracene units in the main chain are blue-light-emitting polymers with photoluminescence maxima at 435 and 455 nm in solution

IT 251659-94-6P 251659-98-0P 251660-01-2P  
251660-05-6P

RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
(soluble rigid-flexible polyethers containing bis(biphenyl)anthracene or bis(styryl)anthracene units in the main chain for light-emitting applications)

RN 251659-94-6 HCA

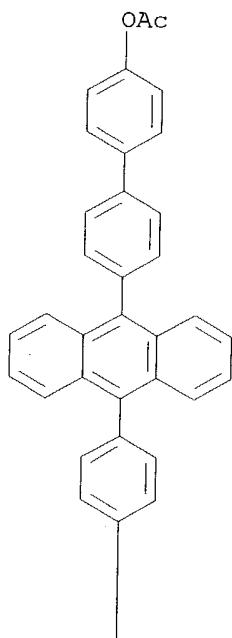
CN [1,1'-Biphenyl]-4-ol, 4',4'''-(9,10-anthracenediyl)bis-, diacetate, polymer with 1,7-dibromoheptane (9CI) (CA INDEX NAME)

CM 1

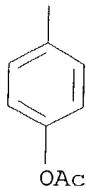
CRN 251659-90-2

CMF C42 H30 O4

PAGE 1-A



PAGE 2-A



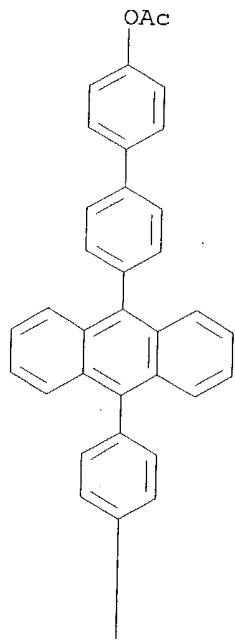
CM 2

CRN 4549-31-9  
CMF C7 H14 Br2Br-(CH<sub>2</sub>)<sub>7</sub>-BrRN 251659-98-0 HCA  
CN [1,1'-Biphenyl]-4-ol, 4',4'''-(9,10-anthracenediyl)bis-, diacetate,  
polymer with 1,9-dibromononane (9CI) (CA INDEX NAME)

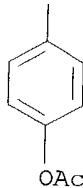
CM 1

CRN 251659-90-2  
CMF C42 H30 O4

PAGE 1-A



PAGE 2-A



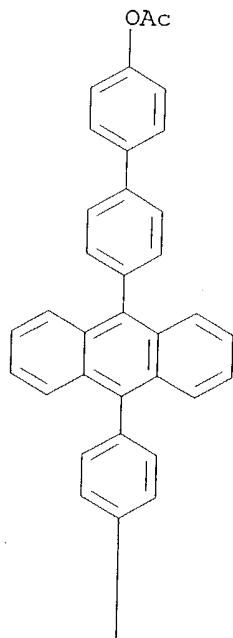
CM 2

CRN 4549-33-1  
CMF C9 H18 Br2Br--(CH<sub>2</sub>)<sub>9</sub>--BrRN 251660-01-2 HCA  
CN [1,1'-Biphenyl]-4-ol, 4',4'''-(9,10-anthracenediyl)bis-, diacetate,  
polymer with 1,11-dibromoundecane (9CI) (CA INDEX NAME)

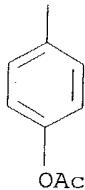
CM 1

CRN 251659-90-2  
CMF C42 H30 O4

PAGE 1-A



PAGE 2-A



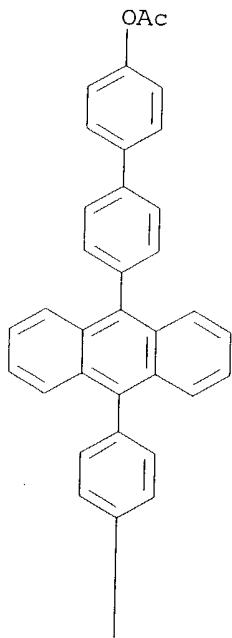
CM 2

CRN 16696-65-4  
CMF C11 H22 Br2Br- (CH<sub>2</sub>)<sub>11</sub>-BrRN 251660-05-6 HCA  
CN [1,1'-Biphenyl]-4-ol, 4',4'''-(9,10-anthracenediyl)bis-, diacetate,  
polymer with 1,12-dibromododecane (9CI) (CA INDEX NAME)

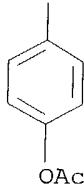
CM 1

CRN 251659-90-2  
CMF C42 H30 O4

PAGE 1-A



PAGE 2-A



CM 2

CRN 3344-70-5  
CMF C12 H24 Br2Br- (CH<sub>2</sub>)<sub>12</sub> - Br

L71 ANSWER 16 OF 19 HCA COPYRIGHT 2004 ACS on STN  
 128:283220 Luminescence properties of PPV derivatives carrying anthracene pendent groups. Jin, Jung Il; Chung, Sung Jae; Yu, Seong Han (Department of Chemistry Advanced Materials, Chemistry Research Center, Korea University, Seoul, 136701, S. Korea). Macromolecular Symposia, 128 (International Symposium on New Approaches in Polymer Synthesis and Macromolecular Formation, 1997), 79-87 (English) 1998. CODEN: MSYMEC. ISSN: 1022-1360. Publisher: Huethig & Wepf Verlag.

AB The photo- (PL) and **electroluminescence (EL)** properties of 3 different PPV derivs. carrying the 9,10-diphenylanthracene units are compared. One (P1) of the polymers contains the 9,10-diphenylanthracene structure as an integral part of the main chain, but the other two have it as the pendent group attached to the main chain through either oxyethyleneoxy (P2) or oxyhexamethyleneoxy (P3) spacer. P1 and P2 exhibit very similar PL and **EL** spectra that are more or less of superimposed feature of the spectra from the backbones and the anthracene pendants. In contrast, P3 shows an **EL** spectrum that is completely different from its PL spectrum. Whereas the PL spectrum of P3 appears to be a combination of the spectra from the main chain and the pendants, as for P1 and P2, the **EL** spectrum of P3, however, looks as if the **lights** were **emitted** only from the backbone. This difference is explained in terms of excited state electronic interactions between the main chain and the pendants.

IT 205744-86-1 205744-88-3 205744-90-7

RL: PRP (Properties)

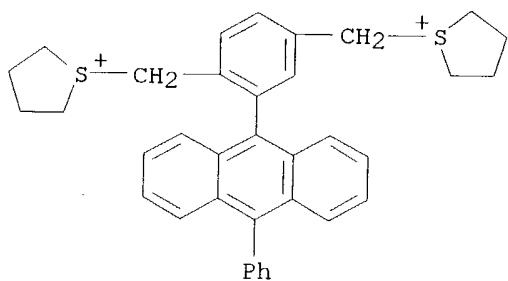
(luminescence properties of poly(phenylenevinylene) derivs. with anthracene pendent groups)

RN 205744-86-1 HCA

CN Thiophenium, 1,1'-[2-(10-phenyl-9-anthracyenyl)-1,4-phenylene]bis(methylene)bis[tetrahydro-, dichloride, homopolymer (9CI) (CA INDEX NAME)]

CM 1

CRN 205744-85-0  
CMF C36 H36 S2 . 2 Cl



●2 Cl-

RN 205744-88-3 HCA

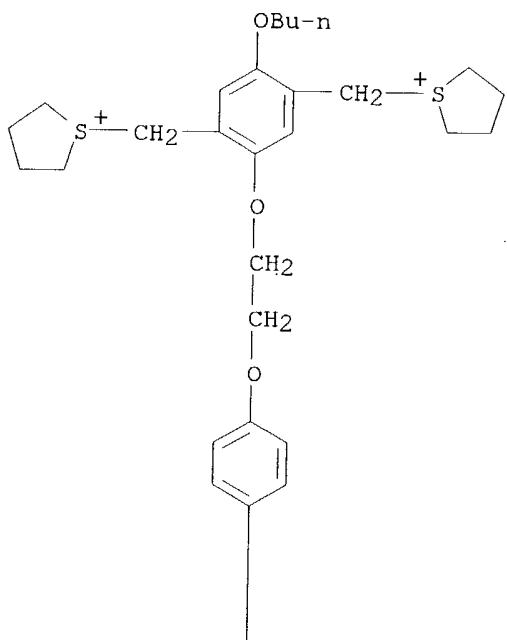
CN Thiophenium, 1,1'-[{2-butoxy-5-[2-[4-(10-phenyl-9-anthracyl)phenoxy]ethoxy]-1,4-phenylene}bis(methylene)]bis[tetrahydro-, dichloride, homopolymer (9CI) (CA INDEX NAME)

CM 1

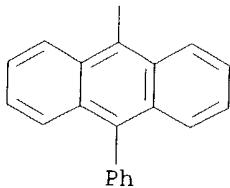
CRN 205744-87-2

CMF C48 H52 O3 S2 . 2 Cl

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PAGE 2-A



●2 Cl-

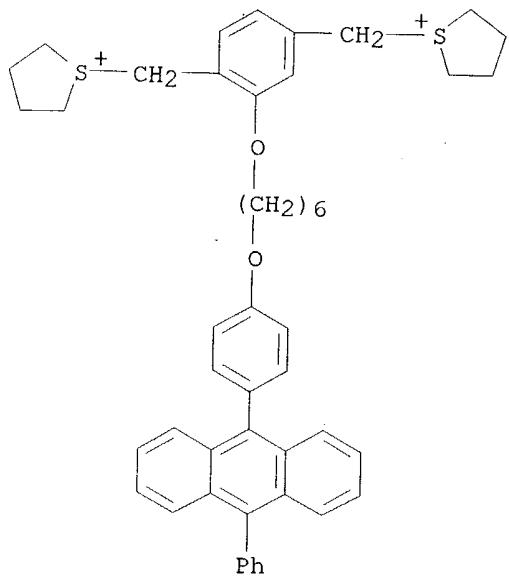
RN 205744-90-7 HCA

CN Thiophenium, 1,1'-[2-[[6-[4-(10-phenyl-9-anthracenyl)phenoxy]hexyl]oxy]-1,4-phenylene]bis(methylene)]bis[tetrahydro-, dichloride, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 205744-89-4

CMF C48 H52 O2 S2 . 2 Cl



●2 Cl-

L71 ANSWER 17 OF 19 HCA COPYRIGHT 2004 ACS on STN

128:230924 **Electroluminescence** of anthracene-containing polyimides.

Mal'tsev, Evgenii I.; Brusentseva, Maria A.; Berendyaev, Vladimir I.; Kolesnikov, Vladislav A.; Lunina, Elena V.; Kotov, Boris V.; Vannikov, Anatolii V. (A N Frumkin Institute of Electro-Chemistry, Russian Academy of Sciences, Moscow, 117071, Russia). Mendeleev Communications (1), 31-32 (English) 1998. CODEN: MENCEX. ISSN: 0959-9436. Publisher: Russian Academy of Sciences.

AB **Electroluminescence** has been revealed in a new class of electroactive polymers, the anthracene-containing aromatic polyimide derivs.;

high thermal stability, ability to cast layers from solution and excellent film-forming properties make these materials of potential interest for technol. applications.

IT 168026-62-8

RL: PRP (Properties)

(electroluminescence of anthracene-containing polyimides)

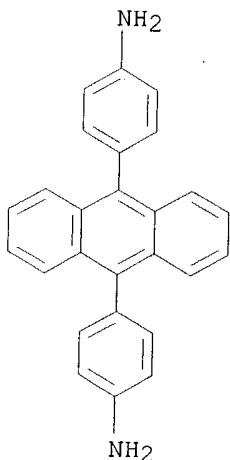
RN 168026-62-8 HCA

CN [5,1':1'(3'H),5''-Terisobenzofuran]-1,1'',3,3',3''-pentone, polymer with 4,4'-(9,10-anthracenediyl)bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 106704-35-2

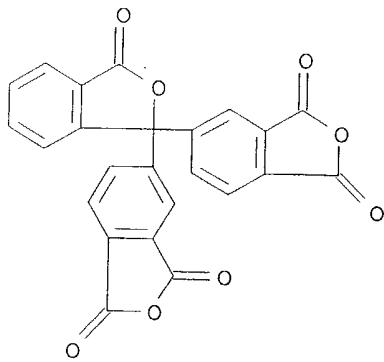
CMF C26 H20 N2



CM 2

CRN 47693-21-0

CMF C24 H10 O8



L71 ANSWER 18 OF 19 HCA COPYRIGHT 2004 ACS on STN  
 127:136117 Novel PPV derivatives emitting light over a  
 broad wavelength range. Chung, Sung Ja; Jin, Jung Il; Kim, Kong Kyum

(Research Center, Korea Univ., Seoul, 136, S. Korea). Advanced Materials (Weinheim, Germany), 9(7), 551-554 (English) 1997. CODEN: ADVMEW. ISSN: 0935-9648. Publisher: Wiley-VCH.

AB An approach to design organic **light-emitting** devices that emit over a broad spectral range, i.e., essentially white light is shown. The preparation of 2 polymers films consisting of substituted poly(p-phenylenevinylene) (PPV) is described, together with the results of absorption, photoluminescence (PL), **electroluminescence** (**EL**) measurements. One polymer carries phenylanthracene moieties directly attached to the phenylene rings in PPV, whereas in the other polymer 9,10-diphenylanthracene moieties are bound through hexamethylene spacers to the phenylene rings in the main chain. Direct attachment of anthracene to the PPV main chain results in nearly the same PL and **EL** behavior, whereas insertion of a hexamethylene spacer produces markedly different PL and **EL** properties.

IT 192872-05-2DP, thermolyzed 192872-11-0DP, thermolyzed  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation and properties of substituted poly(p-phenylenevinylene)s  
**emitting light** over a broad wavelength range)

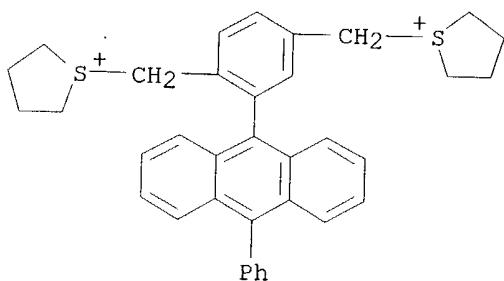
RN 192872-05-2 HCA

CN Thiophenium, 1,1'-[2-(10-phenyl-9-anthracyl)-1,4-phenylene]bis(methylene)bis[tetrahydro-, dibromide, homopolymer (9CI)  
(CA INDEX NAME)

CM 1

CRN 192872-04-1

CMF C36 H36 S2 . 2 Br



●2 Br<sup>-</sup>

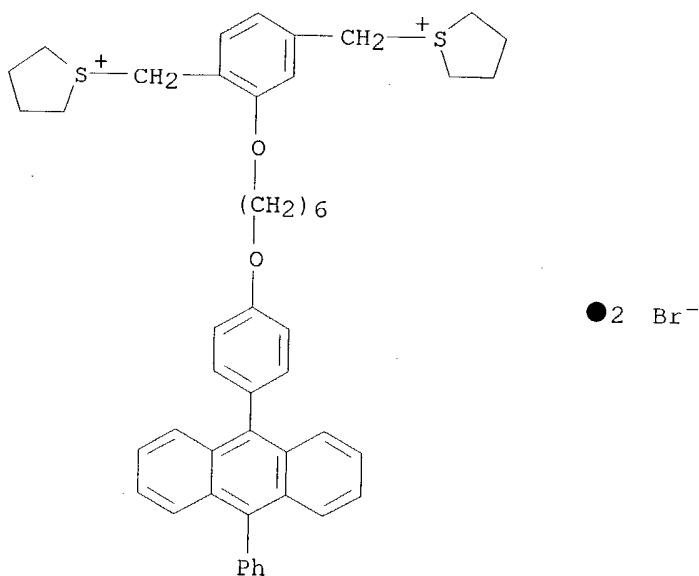
RN 192872-11-0 HCA

CN Thiophenium, 1,1'-[2-[6-[4-(10-phenyl-9-anthracyl)phenoxy]hexyl]oxy]-1,4-phenylene]bis(methylene)bis[tetrahydro-, dibromide, homopolymer (9CI)  
(CA INDEX NAME)

CM 1

CRN 192872-10-9

CMF C48 H52 O2 S2 . 2 Br



IT 192872-05-2P 192872-11-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and properties of substituted poly(p-phenylenevinylene)s emitting light over a broad wavelength range)

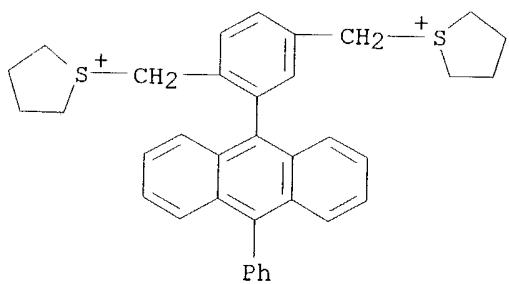
RN 192872-05-2 HCA

CN Thiophenium, 1,1'-[{2-(10-phenyl-9-anthracenyl)-1,4-phenylene}bis(methylene)]bis[tetrahydro-, dibromide, homopolymer (9CI) (CA INDEX NAME)]

CM 1

CRN 192872-04-1

CMF C36 H36 S2 . 2 Br

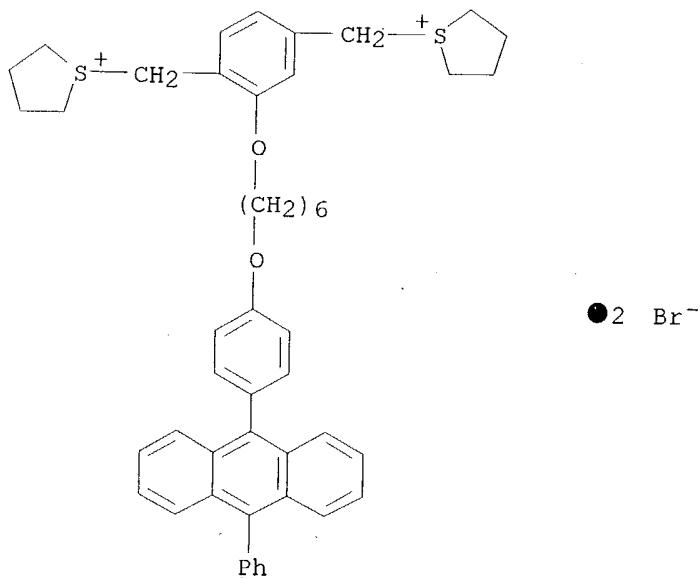


RN 192872-11-0 HCA

CN Thiophenium, 1,1'-[{2-[{6-[4-(10-phenyl-9-anthracenyl)phenoxy]hexyl}oxy]-1,4-phenylene}bis(methylene)]bis[tetrahydro-, dibromide, homopolymer (9CI) (CA INDEX NAME)]

CM 1

CRN 192872-10-9  
 CMF C48 H52 O2 S2 . 2 Br



L71 ANSWER 19 OF 19 HCA COPYRIGHT 2004 ACS on STN

124:177450 Synthesis and spectral-luminescence properties of aromatic polyamides and polyesters with chromophores in the polymer main chain.  
 Barashkov, N. N.; Novikova, T. S.; Guerrero, D. J.; Ferraris, J. P.  
 (Department of Chemistry, The University of Texas at Dallas, PO Box 830688, Richardson, TX, 75083-0688, USA). Synthetic Metals, 75(3), 241-7 (English) 1995. CODEN: SYMEDZ. ISSN: 0379-6779. Publisher: Elsevier.

AB We report polycondensation reactions of several benzimidazole-, benzoxazole- and diphenylanthracenyl-containing chromophores with m-phenylenediamine (MPD), isophthaloyl chloride (IPC) and bisphenol A (BPA) to form polyamides and polyesters. The absorbance and fluorescence spectra of the polymers were measured and the actual molar ratios of luminophoric and nonluminophoric moieties in their structures were determined by comparison to model compds. Most copolymers showed intense blue fluorescence, from solution and film, with a maximum in the 410-515 nm range. Non-conjugated luminescent polymers, which are potentially useful for light-emitting diode applications, may be obtained by a one-stage copolycondensation technique.

IT 173965-52-1P 173965-53-2P 173965-54-3P

173965-55-4P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and spectral-luminescence properties of aromatic polyamides and polyesters with chromophores in main chain)

RN 173965-52-1 HCA

CN 1,3-Benzenedicarbonyl dichloride, polymer with 3,3'-(9,10-anthracenediyl)bis[benzenamine] and 1,3-benzenediamine (9CI) (CA INDEX NAME)

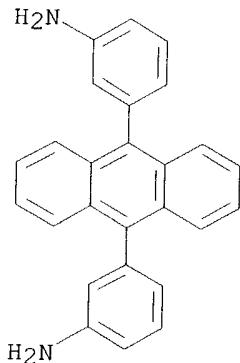
CM 1

D. Garrett

10/786, 812

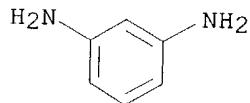
06/29/2004

CRN 173965-51-0  
CMF C26 H20 N2



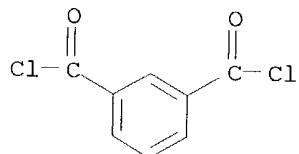
CM 2

CRN 108-45-2  
CMF C6 H8 N2



CM 3

CRN 99-63-8  
CMF C8 H4 Cl2 O2

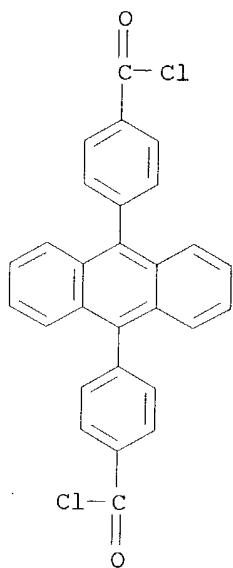


RN 173965-53-2 HCA

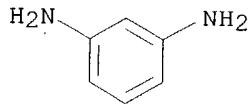
CN 1,3-Benzenedicarbonyl dichloride, polymer with 4,4'-(9,10-anthracenediyl)bis[benzoyl chloride] and 1,3-benzenediamine (9CI) (CA INDEX NAME)

CM 1

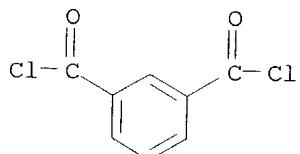
CRN 150600-86-5  
CMF C28 H16 Cl2 O2



CM 2

CRN 108-45-2  
CMF C6 H8 N2

CM 3

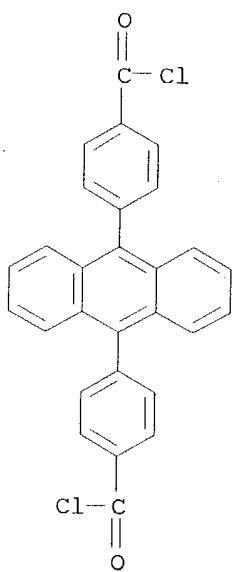
CRN 99-63-8  
CMF C8 H4 Cl2 O2

RN 173965-54-3 HCA

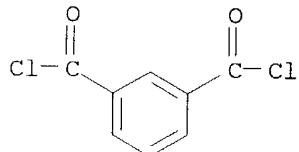
CN 1,3-Benzenedicarbonyl dichloride, polymer with 4,4'-(9,10-anthracenediyl)bis[benzoyl chloride] and 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

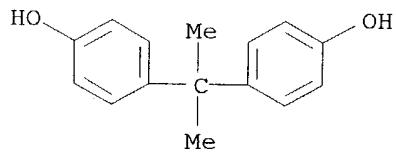
CRN 150600-86-5  
CMF C28 H16 Cl2 O2



CM 2

CRN 99-63-8  
CMF C8 H4 Cl2 O2

CM 3

CRN 80-05-7  
CMF C15 H16 O2

RN 173965-55-4 HCA  
CN 1,3-Benzenedicarbonyl dichloride, polymer with 4,4'-(9,10-anthracenediyl)bis[benzoyl chloride] and 3,3-bis(4-hydroxyphenyl)-1(3H)-isobenzofuranone (9CI) (CA INDEX NAME)

CM 1

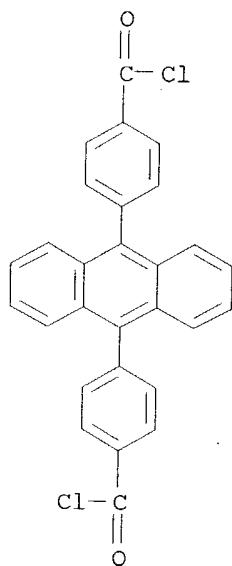
CRN 150600-86-5

D. Garrett

10/786, 812

06/29/2004

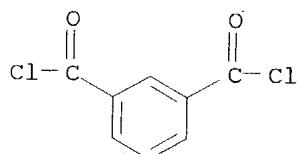
CMF C28 H16 Cl2 O2



CM 2

CRN 99-63-8

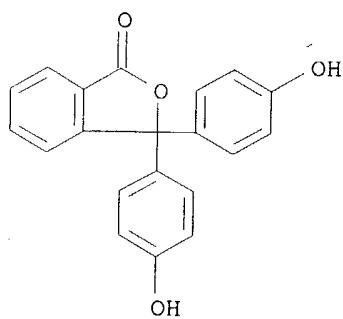
CMF C8 H4 Cl2 O2



CM 3

CRN 77-09-8

CMF C20 H14 O4



=> D L59 1,5,10,15,20 CBIB ABS HITSTR

L59 ANSWER 1 OF 20 HCA COPYRIGHT 2004 ACS on STN  
126:104659 Photoinduced Electron Transfer at the Core/Shell Interface of Polystyrene-Anthracene-Poly(methacrylic acid) Diblock Copolymer Micelles in Aqueous Media. Eckert, A. R.; Martin, T. J.; Webber, S. E. (Department of Chemistry and Biochemistry and Center for Polymer Research, The University of Texas at Austin, Austin, TX, 78712, USA). Journal of Physical Chemistry A, 101(9), 1646-1656 (English) 1997. CODEN: JPCAFH. ISSN: 1089-5639. Publisher: American Chemical Society.

AB We have characterized the photophysics and excited-state electron transfer reactions of polymer micelles formed from diblock polystyrene-(anthracene)-block-poly(methacrylic acid). In these studies (anthracene) comprises either a single 1-(2-anthryl)-1-phenylethylene (An) or an average of two vinyl-9,10-diphenylanthracene (vDPA). This architecture is expected to place the chromophores in the interfacial region between the polystyrene core and poly(methacrylic acid) corona. Quenching of the anthryl fluorescence by Tl<sup>+</sup> and two viologens (SPV, 4,4'-bipyridyl-1,1'-bis(propanesulfonate), and MV2<sup>+</sup>, Me viologen) demonstrated that access to these chromophores was limited at all pHs, and the rate of diffusion of the viologens was relatively slow. Similar conclusions were drawn from quenching of the 3An\* state and the anion radical SPV<sup>•-</sup> by O<sub>2</sub>. We believe this illustrates that the interfacial region of the micelle is not fully deprotonated even at pH 9. It was observed that the fraction of 3An\* that was quenched by SPV was smaller than 1An\*. This demonstrates the existence of a heterogeneous distribution of anthryl sites such that some 3An\* cannot be quenched, which is not the case for 1An\*. We conclude that the spatial requirements for quenching these two excited states are not equivalent. Electron transfer quenching by SPV produces SPV<sup>•-</sup> that is very long-lived, but some unknown reaction removes the anthryl cation radical. As a consequence, we can build up a concentration of SPV<sup>•-</sup> under steady-state photolysis. The quantum yield of charge separation per quenching event is similar to previous cases we have studied, ca. 0.5, but unlike linear polyacids, there is very little pH dependence. This is consistent with the idea that there is minimal deprotonation near the core-corona interface of the micelle.

IT 185908-24-1D, hydrolyzed

RL: PEP (Physical, engineering or chemical process); PRP (Properties);  
PROC (Process)

(diblock; photoinduced electron transfer at the core-shell interface of anthracene derivative-styrene-methacrylic acid diblock copolymer micelles in aqueous media)

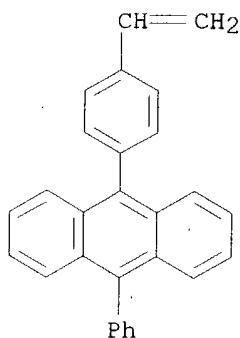
RN 185908-24-1 HCA

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 9-(4-ethenylphenyl)-10-phenylanthracene, block (9CI) (CA INDEX NAME)

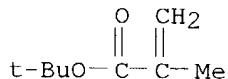
CM 1

CRN 6671-65-4

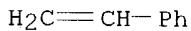
CMF C28 H20



CM 2

CRN 585-07-9  
CMF C8 H14 O2

CM 3

CRN 100-42-5  
CMF C8 H8

L59 ANSWER 5 OF 20 HCA COPYRIGHT 2004 ACS on STN

109:7285 Photophysics of block copolymers of 2-vinylnaphthalene and vinyldiphenylanthracene: unidirectional energy transfer. Sowash, Geoffrey G.; Webber, S. E. (Cent. Polym. Res., Univ. Texas, Austin, TX, 78712, USA). *Macromolecules*, 21(6), 1608-11 (English) 1988. CODEN: MAMOBX. ISSN: 0024-9297.

AB Sensitization of the diphenylanthracene (I) singlet state in the title block copolymer by that of the naphthalene moiety is very efficient in THF solns. The quantum efficiency of sensitization as measured by steady-state fluorescence spectroscopy is higher than that based on lifetime shortening. This implies that some sensitization occurs very quickly (e.g., "contacts" between donor and acceptor) or that a nonemitting precursor state of the observed naphthalene singlet can sensitize I. By virtue of the block nature of this copolymer energy migration is unidirectional, i.e., from one block to another.

IT 114132-43-3

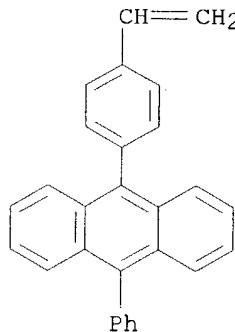
RL: PRP (Properties)

(photophysics of, unidirectional energy transfer in relation to)

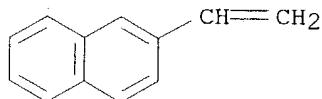
RN 114132-43-3 HCA

CN Anthracene, 9-(4-ethenylphenyl)-10-phenyl-, polymer with 2-ethenylnaphthalene, block (9CI) (CA INDEX NAME)

CM 1

CRN 6671-65-4  
CMF C28 H20

CM 2

CRN 827-54-3  
CMF C12 H10

L59 ANSWER 10 OF 20 HCA COPYRIGHT 2004 ACS on STN  
 102:167476 Water-soluble photon-harvesting polymers: intracoil energy transfer in anthryl- and **fluorescein**-tagged poly(vinylpyrrolidinone). Hargreaves, John S.; Webber, Stephen E. (Dep. Chem., Univ. Texas, Austin, TX, 78712, USA). *Macromolecules*, 18(4), 734-40 (English) 1985. CODEN: MAMOBX. ISSN: 0024-9297.

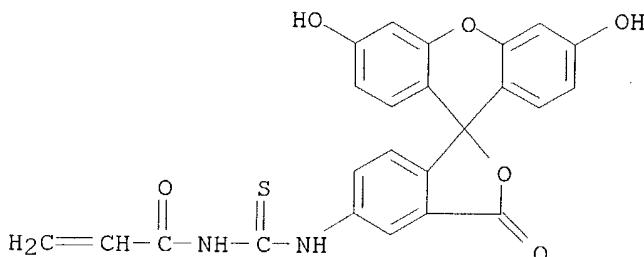
AB A copolymer [95070-20-5] soluble in polar solvents (e.g., MeOH, H2O) was prepared from 1-vinyl-2-pyrrolidinone 44, 9-phenyl-10-(4-vinylphenyl)anthracene (I) 0.42, and the thiourea from acrylamide and **fluorescein** isocyanate (II) 0.42 mmol. Absorption of light by I resulted in efficient intracoil sensitization of the 1st excited state of II. The quantum efficiency of this process was 0.4 in MeOH and 0.8 in H2O, corresponding to a smaller coil size in H2O. The **fluorescence** decay showed intracoil energy transfer to be essentially static, and that anthryl aggregation can result in nonexponential decay, interpreted as a dynamic equilibrium between the 1st excited state of I and a nonfluorescent dimer state. **Fluorescence** quenching showed the polymers to be inhomogeneous, self-organizing into hydrophobic and hydrophilic regions.

IT 95070-20-5  
 RL: PRP (Properties)  
 (proton-harvesting, intracoil energy transfer in)

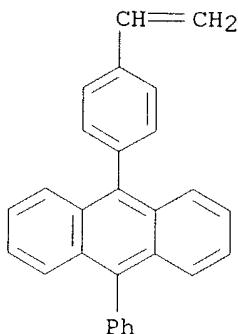
RN 95070-20-5 HCA

CN 2-Propenamide, N-[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]thioxomethyl]-, polymer with 9-(4-ethenylphenyl)-10-phenylanthracene and 1-ethenyl-2-pyrrolidinone (9CI) (CA INDEX NAME)

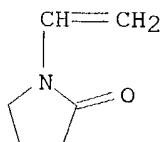
CM 1

CRN 95070-19-2  
CMF C24 H16 N2 O6 S

CM 2

CRN 6671-65-4  
CMF C28 H20

CM 3

CRN 88-12-0  
CMF C6 H9 N O

L59 ANSWER 15 OF 20 HCA COPYRIGHT 2004 ACS on STN

77:102390 Polymers and copolymers capable of reacting with oxygen in presence of light. Meyer, Guy (Cent. Rech. Macromol., Strasbourg, Fr.). Revue Generale des Caoutchoucs &amp; Plastiques, 49(5), 443-8 (French) 1972. CODEN: RCPLA5. ISSN: 0035-3175.

AB Radical polymerization of 9-phenyl-10-(p-vinylphenyl)anthracene (I) [6671-65-4] with styrene gave 9-phenyl-10-(p-vinylphenyl)anthracene-styrene polymer

(II) [26742-85-8], mol. weight 0.5-10 .tim. 105. Anionic polymerization gave II, mol. weight 0.8-25 .tim. 105. At 180.deg., II underwent reversible and repeatable photooxidn. in solution or as films. Similar behavior was shown by mech. mixts. of 9,10-diphenylanthracene (III) [1499-10-1] and polystyrene [9003-53-6] at III concentration <1 g/l. Radical polymerization of I gave amorphous poly[9-phenyl-10-(p-vinylphenyl)anthracene] [26742-86-9], mol. weight 7.2-9.6 .tim. 105. The photooxidn. and **fluorescent** properties of III and their applications are also discussed.

IT 26742-85-8

RL: RCT (Reactant); RACT (Reactant or reagent)  
(photooxidn. of, reversibility of)

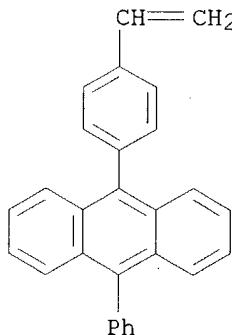
RN 26742-85-8 HCA

CN Anthracene, 9-(4-ethenylphenyl)-10-phenyl-, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 6671-65-4

CMF C28 H20



CM 2

CRN 100-42-5

CMF C8 H8

H<sub>2</sub>C=CH-Ph

L59 ANSWER 20 OF 20 HCA COPYRIGHT 2004 ACS on STN

67:44232 Decreased polarized **fluorescence**; determination of the relaxation time of a vinyl polymer in solution. Wahl, Philippe; Meyer, Guy; Parrod, Jacques (Centre Biophys. Mol., Orleans-La Source, Fr.). Comptes Rendus des Seances de l'Academie des Sciences, Serie C: Sciences Chimiques, 264(20), 1641-4 (French) 1967. CODEN: CHDCAQ. ISSN: 0567-6541.

GI For diagram(s), see printed CA Issue.

AB A mixture of 40 g. styrene and 0.5 g. 9-phenyl-10-p-vinylphenylanthracene (I) was polymerized in C<sub>6</sub>H<sub>6</sub> at 55° to give a polymer containing 0.7% **fluorescent** groups and with a mol. weight of 106. Polymer solns. (0.5%) in variable proportions of PhCl and Pyralene 1498 were subjected to excitation radiation at 380 or 360 m $\mu$  and the **fluorescence**

was measured by using a Wratten Number 2A filter. The extent of polarization is directly proportional to the viscosity of the less-viscous substances and the exptl. and calculated values for the extent of polarization showed good agreement. The results were used to calculate mol. relaxation times.

IT 26742-85-8, properties

RL: PRP (Properties)

(fluorescence of, and relaxation time determination therefrom)

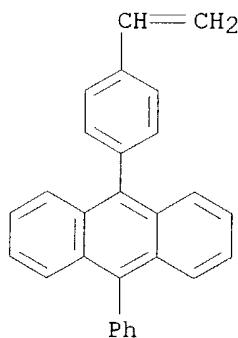
RN 26742-85-8 HCA

CN Anthracene, 9-(4-ethenylphenyl)-10-phenyl-, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 6671-65-4

CMF C28 H20



CM 2

CRN 100-42-5

CMF C8 H8

H<sub>2</sub>C=C-CH-Ph

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